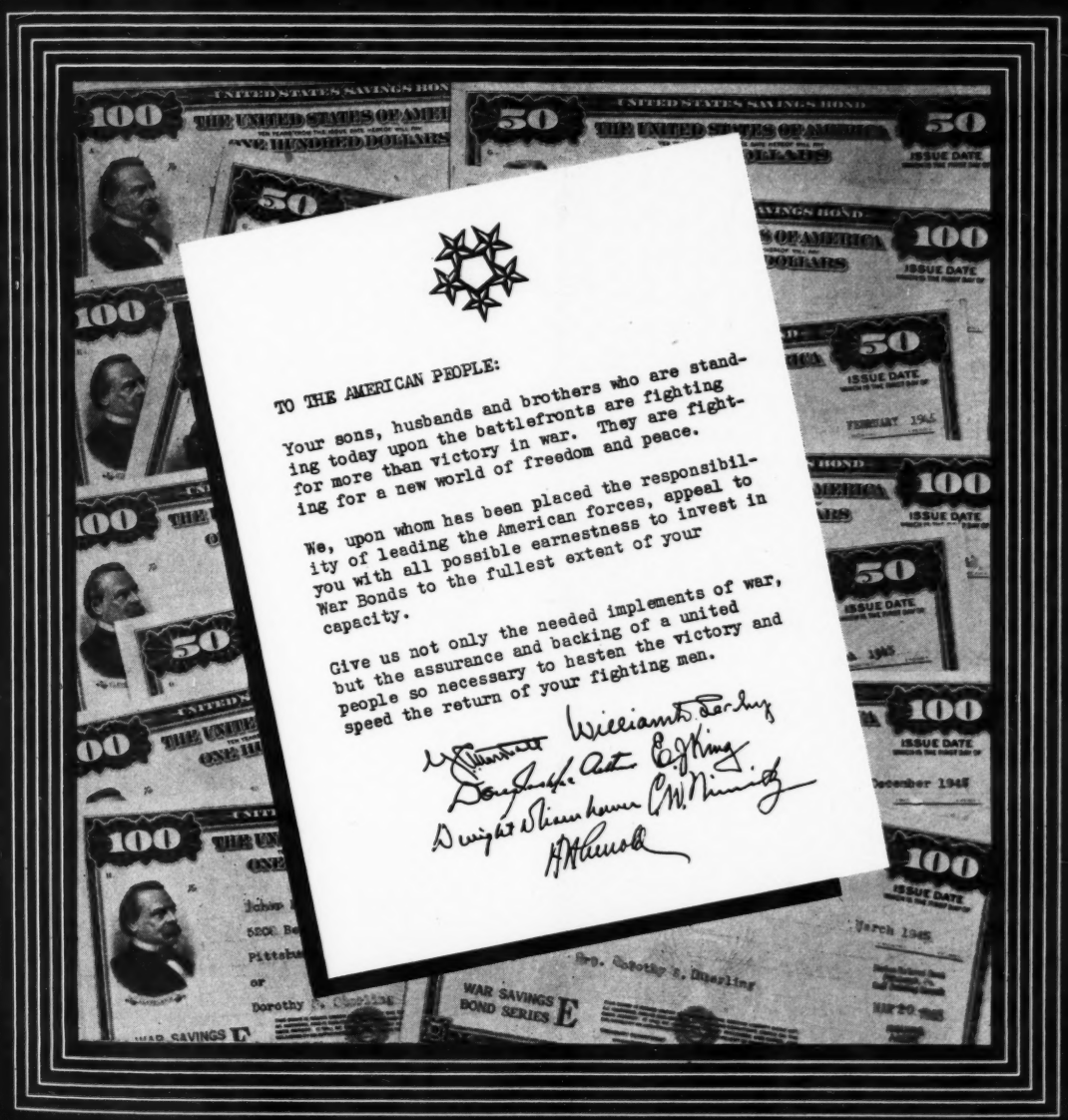
D E N T A L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Your sons, husbands and brothers who are standing today upon the battlefronts are fighting for more than victory in war. They are fighting for a new world of freedom and peace.
We, upon whom has been placed the responsibility of leading the American forces, appeal to you with all possible earnestness to invest in War Bonds to the fullest extent of your capacity.
Give us not only the needed implements of war, but the assurance and backing of a united people so necessary to hasten the victory and speed the return of your fighting men.
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C. W. Nimitz
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WAR SAVINGS BOND SERIES E

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USE THE LIGHT TO SEE THE DARK* . . .

USE THE RED TO SEE THE YELLOW . . .

USE THE DARK TO SEE THE LIGHT* . . .

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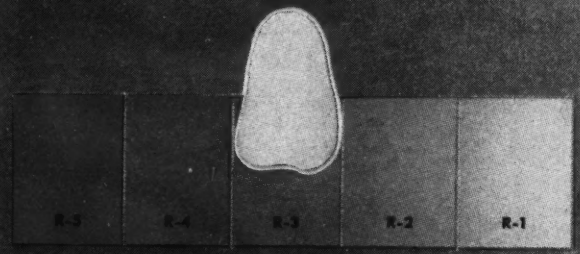

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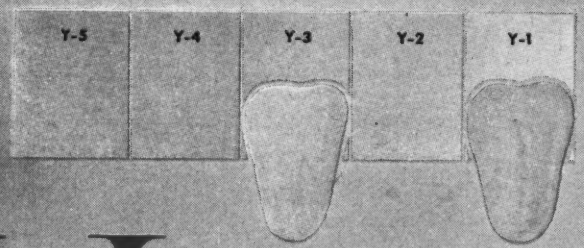

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THE DENTAL Digest

VOL. 51 NO. 6

June 1945

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The Orthopedist Looks at the Dentist

EMIL D. W. HAUSER, M.D., Chicago

The dentist, by occupation, is subject to a certain amount of physical strain, more in some ways than men in other professions. The reason for this is the necessity of prolonged standing in the same position, sometimes in an awkward position. This results in an abnormal strain at the weight-bearing articulations, which gives him trouble with his feet, his knees, at the lumbosacral angle, and at the sacroiliac joints.

Preventive and corrective measures for these occupational disabilities are described. Emphasis is placed on early prophylactic treatment, periods of rest while at work, and increasing one's general strength by mild but effective exercises when not too tired.

WE ARE LIVING in a time of stress, when the fatigue syndrome is common to us all. All war times are strenuous times, and now for the most part everyone is doing as much as he can. The load on the medical and dental professions is tremendous. Many of the men are gone, which results in much more work to be done by those who are left at home. The dentist is subject to strains as a result of his profession. The additional load in these times of war exaggerates these occupational strains.

From the orthopedist's point of view, the dentist has a disposition toward disturbances caused by mechanical strain. His profession requires prolonged standing, and, at best, prolonged sitting, often in awkward positions. All weight-bearing structures, therefore, could give rise to disorders due to mechanical strain.

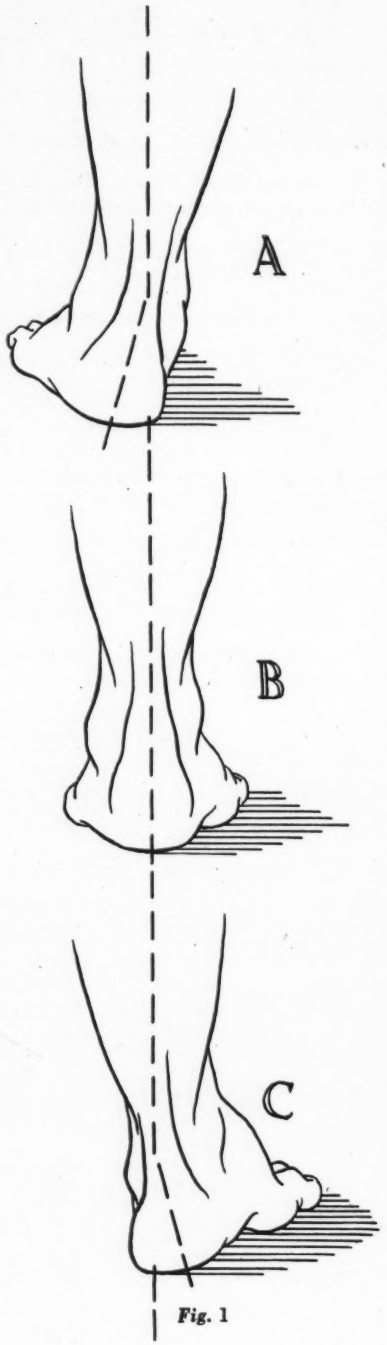


Fig. 1

The weight-bearing structures to be considered are the foot, the knee, and the back. The foot usually receives the greatest strain in standing. For the dentist who does some of his work sitting at a bench, the back receives more strain, inasmuch as it is used in both sitting and standing.

It is well for the dentist to have some understanding of the symptoms and findings associated with the mechanical strains toward which he has a tendency. As a rule the dentist neglects all the symptoms and structural changes until they are so advanced that they are a handicap in his profession. Prophylactic treatment is the best treatment for these conditions. The earlier the symptoms and findings are recognized and their etiology understood, the better.

The dentist is, likewise, subject to a fatigue syndrome. It is for this reason that it is well to know what disabilities this fatigue syndrome may lead to, and at the same time to know what measures can be used to prevent the condition. It is necessary to be able to recognize the etiology, symptoms, and findings in order to carry out prophylactic treatment.

Foot Disorders

The most common orthopedic disorder for the dentist occurs in the foot. Constant standing, usually in a position that puts more strain on one foot than on the other, places an increased load on the structures of the foot. The long hours of standing make it impractical for him to carry out exercises that would develop the strength of these structures. Two factors, therefore, increase the strain:

Fig. 1—*Left foot*: (*A*) *Valgus deformity.* (*B*) *Normal position.* (*C*) *Varus deformity.*

(1) The abnormally great demands of the work, and (2) the inability to carry out normal exercises which would strengthen the foot. The imbalance between the capacity of the foot to do its work, and the demands made upon the foot results in a decompensation.

Decompensation Symptoms—The symptoms of decompensation are fatigue, pain in the ball of the foot, and pain in the arch, followed by referred pains in the legs. The legs get tired and "heavy" and there is soreness in the muscles, particularly when starting to walk after resting. Cramps in the muscles sometimes occur. If the condition is of long duration the ligaments become strained and there is a sharp localized pain at the height of the arch. Painful calluses and painful corns occur. The anterior part of the foot spreads, and impingement of the nerves takes place, causing an acute pain.

Decompensation Deformity—The type of deformity caused by a decompensation of the foot is quite constant.

1. First the heel goes into valgus (Fig. 1). This means that the calcaneus (heel bone) is displaced in a lateral direction at the talocalcaneal joint. When the heel turns out in this manner the lateral side of the foot is higher than the medial side. This is called pronation.

2. The pronation is associated with a lowering of the longitudinal arch (Fig. 2). The lowering of the longitudinal arch is what is commonly known as "flat foot." The technical name is pes valgoplanus. When the arch is lowered a strain is placed upon the ligaments that are attempting to retain the normal relationship of the bones to each other in the midtarsal area. The strain on these ligaments will give rise to an inflamma-

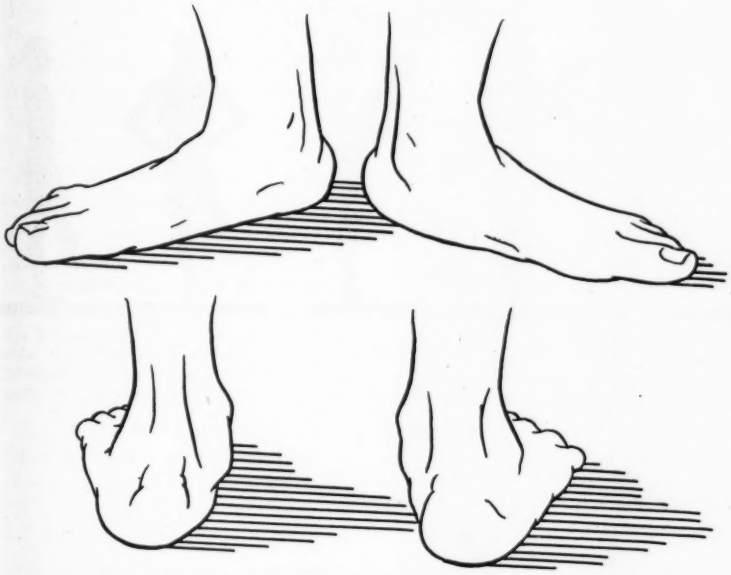


Fig. 2—Valgus deformity with lowering of the longitudinal arch (flat foot).

Fig. 3—Painful callus over the second and third metatarsal heads of the right foot.

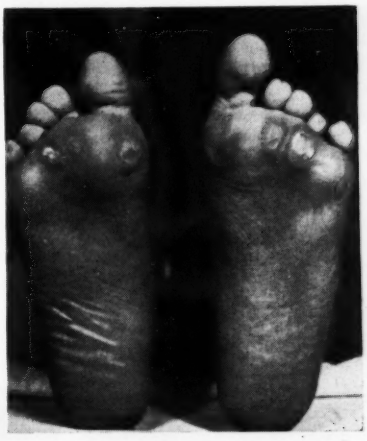


Fig. 4—Painful calluses over the third and fourth metatarsal heads.

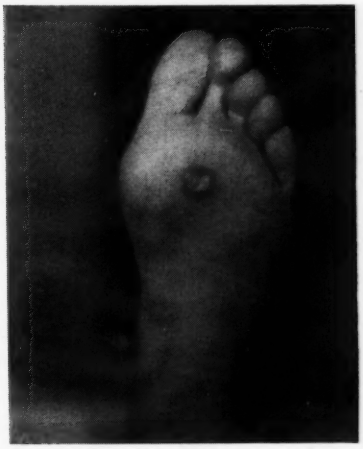


Fig. 5—Classical callus of the weight-bearing area, easily mistaken for a wart.

EXERCISES

FIRST SERIES

PRINCIPLE: That exercises be in accord with normal function of the back, which is to maintain the erect position.

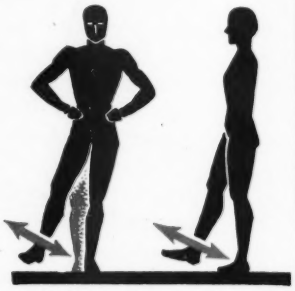
Each exercise must start and end with correct standing position. Full inspiration is advised at beginning of each exercise, expiration on completion of exercise.

Raise arms anteriorly overhead, and lower.

Raise arms laterally overhead, and lower.

Bend trunk to right at waist, and return. Repeat to left.

Bend trunk forward at hips. Maintain extended position of back and head. Return.



Raise leg, knee extended optimum distance, in rhythm, maintaining erect position. Repeat to right, left, forward, sideward, backward.

SECOND SERIES

Examples of exercises suggested for developing strength.

Lie on back, arms folded on chest. Come to a sitting position.

Lie on back, raise one leg and lower. Repeat with other leg.

Raise both legs and lower. Back must be held flat throughout both exercises.

Push-up. Keep abdomen firm and back straight.

THIRD SERIES

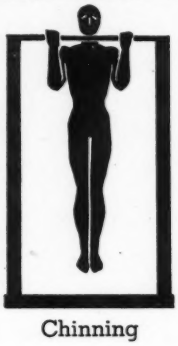
Physiologic exercises

Normal gait: Body held erect, propulsion carried out by heel-toe gait. A properly fitted shoe with low, broad heel, flexible shank, and Hauser bar is worn. With return to normal physiologic exercise there is reestablishment of normal balance between capacity of back and demands made on it.

Walking

Golfing

Skating



Chinning

Teaching

Farming

tion, which accounts for the localized pain and tenderness in this area.

3. The altered position over a long time sets up an irritation in the articulations themselves. The inflammation which is the result of this irritation is called an arthritis. If this arthritis is present for a long time, characteristic changes are seen on roentgenographic examination: There is a roughening of the joint surface; and overgrowths, so-called exostoses, are seen at the margins.

4. There is a displacement of the head of the first metatarsal bone away from the head of the second, and at the same time the head of the first metatarsal bone is displaced dorsally. This is brought about when the counter pressure from the floor meets the excessive load from the body weight. The displacement results in a widening of the anterior part of the foot. The dorsal displacement of the head of the first metatarsal bone lowers the second and third so that undue pressure occurs over the heads of these metatarsal bones. This extra pressure results in painful calluses over this area (Figs. 3 and 4).

5. Continuous pressure results in an inflammation of the bursa beneath the heads of the metatarsal bones. This is extremely painful, and is one of the primary causes of metatarsalgia. True metatarsalgia, however, is a referred pain to the toes, usually the third and fourth. This is a result of decompensation in which there is an impingement of the nerves by the heads of the metatarsal bones as a result of the altered relationship. The nerves are impinged when the shoe is worn because this compresses the heads of the metatarsal bones. The condition is usually worse in high-heeled shoes in which more pressure takes place. Removal of the shoe and massaging of the foot frequently relieve the acute pain. Recently some cases of metatarsal pain have been described in the literature in which there were small tumors on the nerve, removal of which gave relief of the symptoms.

6. The "bunion" is the immediate result of displacement of the head of the first metatarsal bone (Figs. 6 through 9). The projecting head of the first metatarsal bone rubs against the shoe and an inflammation of the bursa in this area results. The bursa becomes enlarged, swollen, red, and painful. The displacement of the metatarsal bone is associated with a lateral displacement of the great toe (hallux valgus). The toe may be displaced to such an extent that it overlaps the second toe.

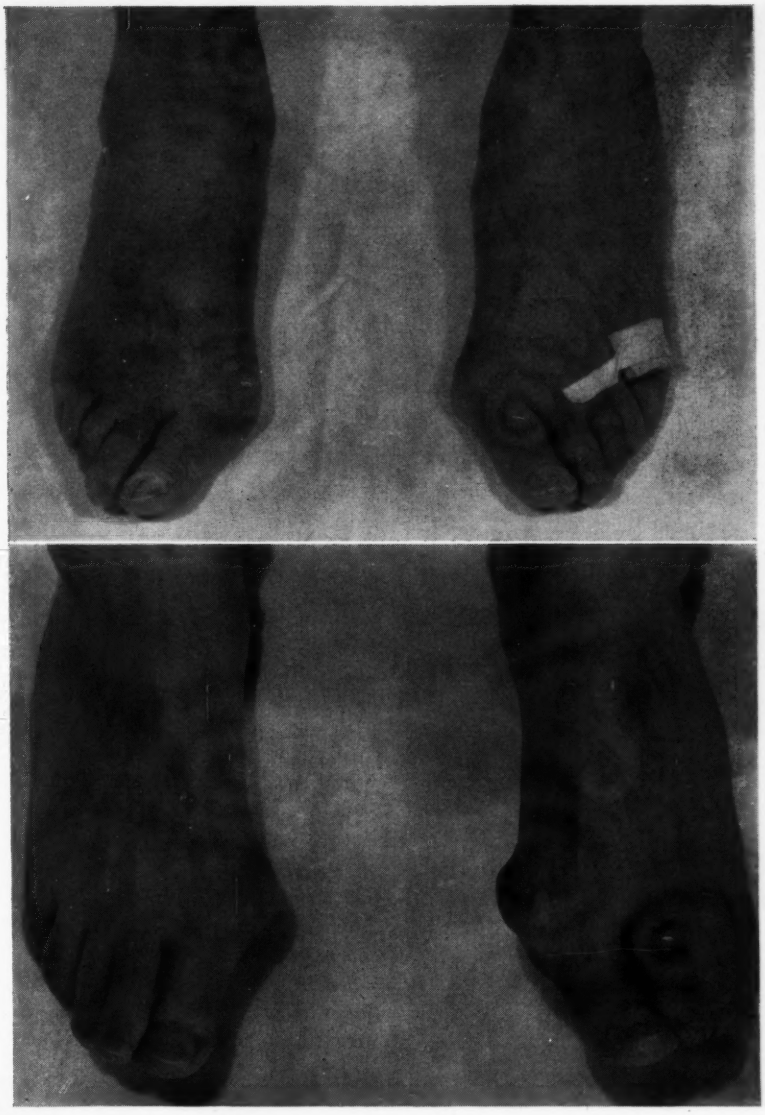


Fig. 6 (top)—Hallux valgus, bursitis, and contracted toes.
Fig. 7 (bottom)—Typical hallux valgus and bursitis before operation.

7. When the arch is lowered the foot becomes longer, necessitating a longer and wider shoe. More important, however, is the contracture of the toes which takes place when the foot becomes longer and the short muscles in the bottom of the foot are under tension (Figs. 10 and 11). These short muscles run from the heel to the tips of the toes. If the distance from the heel to the toes is lengthened and the muscles do not stretch accordingly, a contracture of the toes will result. The contracted toes have the appearance of a claw toe or a hammer toe. The angulation of the articulation causes a friction rub against the shoe and gives rise to corns, an accumulation of skin which causes painful pressure on the nerves.

Treatment—1. First it is necessary to bring the foot back into normal position (Fig. 1). To bring the heel into varus, the opposite of valgus, the

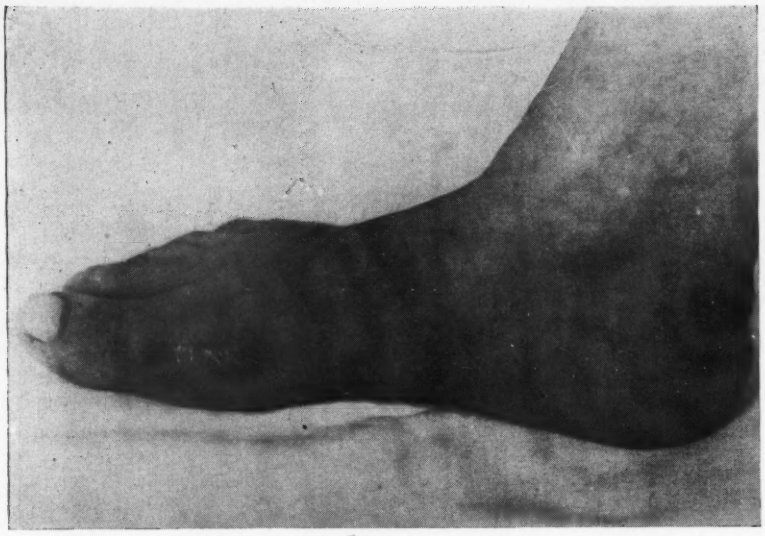


Fig. 8—After operation: Correction of the bursitis and the hallux valgus.

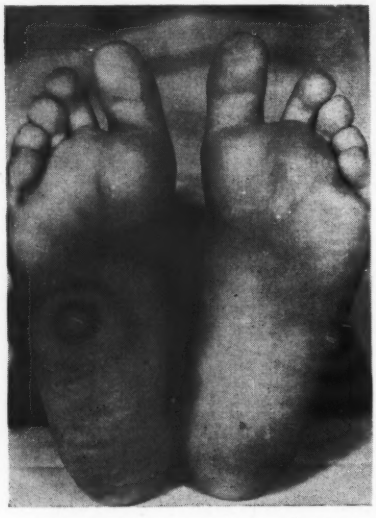


Fig. 9—Bottom view postoperatively.

inner border of the heel of the shoe is raised ¼ inch. This makes an inclined plane which tends to correct the valgus deformity. Correction of the valgus deformity influences the pronated position to such an extent that there is a restoration of the normal longitudinal arch. This is particularly true if the normal position of the head of the first metatarsal bone is obtained.

2. To bring the head of the first metatarsal bone back into normal position, a transverse comma-shaped bar is used. This bar rests behind the heads of the fourth, third, and second metatarsal bones. It is higher on the outer side than on the inner side, forming an inclined plane which tends to bring the heads of the middle metatarsal bones higher and the first metatarsal head lower, thus reestablishing a normal anterior arch. With foot in normal position it is possible to carry out normal function.

3. Correct gait is the best physiologic exercise; therefore, teaching normal walking is an essential part of the program of rehabilitation. It is an exercise that is practical because it can be carried out at any time. In this way the maximum amount of strength can be obtained for the foot, and there will be not only an improvement in appearance but also an increase in the efficiency of the foot.

4. Inasmuch as there is an occupational hazard for the dentist that predisposes him to undue strain even for a normal foot, it may be necessary in certain instances to wear supportive shoes part of the time to guard against occupational strain. Rather than wearing a supportive shoe or arch support, I would suggest that the dentist sit down at certain intervals to rest his feet and use the corrective shoes for normal walking. If the corrective shoes are too strenuous, ordinary shoes can have corrective pads applied inside for comfort; these tend to correct the foot.

Knee Disorders

Symptoms—An increased load and demand on the knee, particularly if there is some structural weakness, will result in a valgus deformity of the knee (knock knee). As soon as the knee is in a valgus position an undue strain occurs which, if it persists, results in an inflammation of the joint, an arthritis. A continuous inflammation over a long time results in bony changes, hypertrophic changes, actual exostoses, and occasionally loose bodies. Before the bone changes occur there is a strain on the ligaments with resultant pain on the medial side of the knee.

Fig. 10—Contracted toes with hallux valgus.

Treatment—1. To correct these symptoms it is necessary first to correct the standing position in order to bring the weight properly through the knee, the shaft of the femur, the tibia, and the fibula.

2. When the foot is in valgus, the knee is likewise brought into valgus. Fortunately the correction of the symptoms of the foot also results in a correction of the symptoms of the knee. Even if the symptoms are limited to the knee, correction of the foot as indicated will result in a correction of the knee.

3. Treatment will not correct the arthritic changes due to mechanical strain. At this late stage, however, correction of the knee by means of the corrective shoes and altered weight bearing will relieve the strain, thereby relieving the symptoms. A regression of symptoms or an improvement in the actual arthritic changes in the knee will take place. Inasmuch as the inflammation of the knee is the result of strain, improvement of the mechanics will relieve the strain, and the inflammation will subside. When the inflammation subsides the symptoms disappear and the pathologic changes in the knee improve.

Back Disorders

More difficult to correct than the foot and knee is functional decompensation of the back. The foot and knee can be relieved of weight bearing by sitting down, but the back is under tension as long as one is in the upright position, whether standing or sitting (Figs. 12 through 16).

Symptoms—The back has normal curves: dorsal kyphosis and lumbar lordosis, with the height of the lumbar curve at the lumbosacral angle. When these curves are increased the lumbosacral angle becomes more acute and there is strain at this joint. The shearing forces are increased. Decompensation of the back gives rise to symptoms of fatigue and inflammation. The fatigue is felt first in the muscles and may be high, but later becomes more definite in the low back area. The signs of inflammation are usually in the area of the lumbosacral articulations. The inflammation expresses itself as a painful area with muscle spasm in the lumbar area and loss of lumbar curve, and some stiffness and limitation of motion. Tenderness may be present, particularly with deep pressure.

Fig. 11—*Contracted toes.*

There is a tendency toward contracture of the muscles in this area; this is seen most commonly in the tensor fascia lata. Constant inflammation in these joints sets up a reflex spasm. It also causes a referred pain which may go down the outer side of the thigh or to the gluteal area, or may follow the course of the sciatic

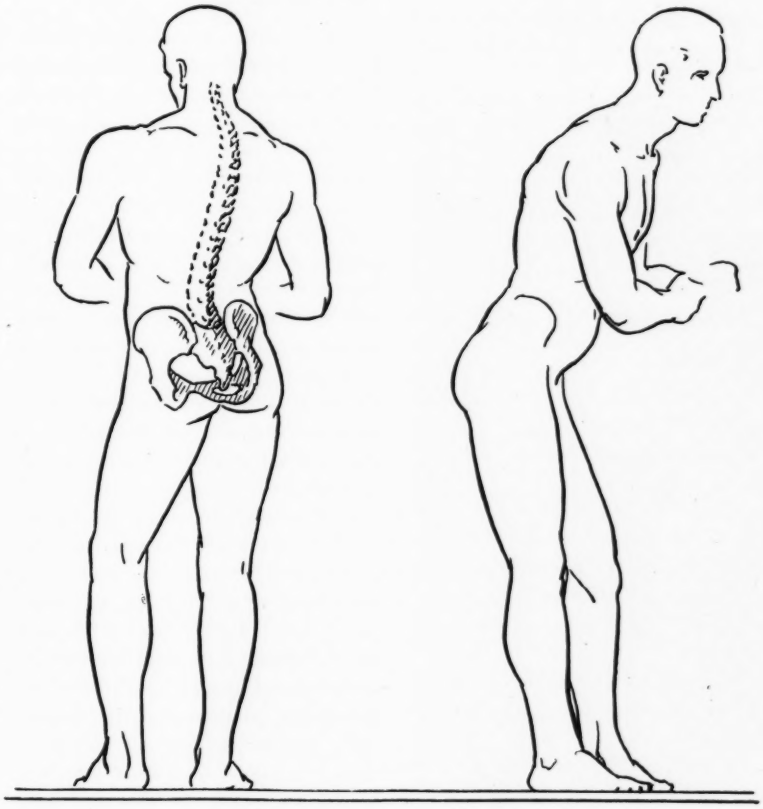


Fig. 12—*Position of dentist at chair, causing acute angulation of the lumbosacral angle.*

Fig. 13—Acute back strain as a result of overwork.

nerve. If the inflammation of the joint is present for a long time arthritic changes will occur and there will be a loss of joint space with overgrowth. These changes can be seen by roentgenographic examination. Inasmuch as there is a change in the joint space there is also an alteration in the disc. These discs are rarely displaced sufficiently to press upon the nerves in this area.

Treatment—Treatment consists of correction of the decompensation. Three corrections must be made: (1) The normal curves must be reestablished; (2) the inflamed joints must be protected and relieved from strain; and (3) the strength of the muscles of the trunk must be increased so that the upright position can be held. In extreme cases rest in bed is necessary until the acute phase subsides.

Correction is usually carried out by means of a plaster of paris body cast. The cast is applied in such a way that it takes the strain off the joint and corrects the deformity. The patient stands taller than he does normally, and holding this improved position is an exercise in itself. Periodic rest and graduated exercises are prescribed (see full-page illustration).

Fig. 14—Back view of patient in Figure 13.

General Exercises

Anyone who must stand or sit too long is subject to stresses and strains. Prolonged standing in an awkward position will give more weight bearing to one foot, which will tend to become decompensated and give rise to the symptoms described.

1. The first thing to consider in treatment is prophylaxis. This calls for alteration of the standing position from time to time. To keep the foot at maximum strength one should walk properly. Once the foot is out of line it will not correct itself. It is necessary, therefore, to bring the foot into normal position and to use it normally.

2. The same treatment can be applied to the knee, inasmuch as the posture at the dental chair is one that requires more strain on one knee than on the other. Rather than bandaging the knee and depending on getting relief by rest at night, it is better to change the position at work, if possible. The best solution for this is to learn to work in the sitting position. In this way both the knee and foot can be relieved of strain. One must bear in mind, however, that changing from standing to sitting is not

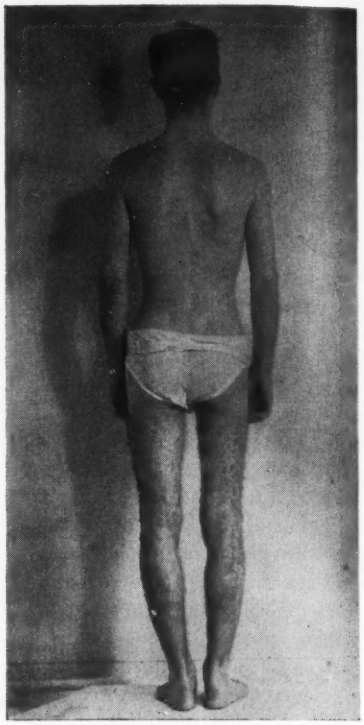


Fig. 15—Acute back strain, not as severe as that shown in Figures 13 and 14.

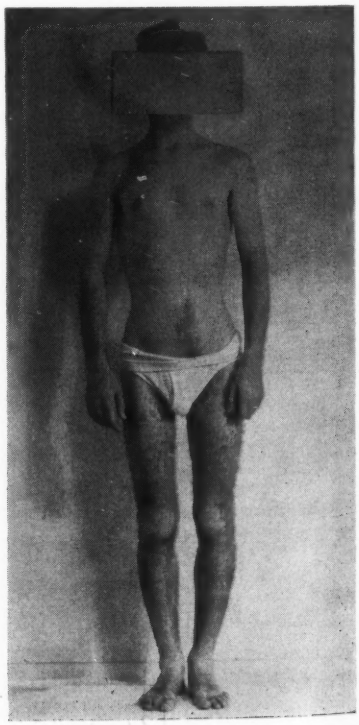


Fig. 16—Front view of patient in Figure 15.

sufficient, and that a certain amount of exercise is necessary.

3. The problem of treating the back is more difficult because the back is under strain in both sitting and standing. The only satisfactory prophylactic measure is to take a certain amount of time to lie down at intervals each day. If this is done one can get more, or at least as much, work done as before, and certainly one will feel much better at the end of the day.

4. In addition to the periodic resting it is essential that exercise be used to increase the strength of the muscles (see full-page illustration).

a) The principle involved in all exercises is to hold the body as tall as possible. Holding the correct upright position, the abdomen in and the chest up, should be practiced at all times, in sitting, standing, and walking. It is impossible to walk correctly unless the correct upright position is held.

b) The foot is the organ of locomotion. In walking, place one foot out before you with the front part of the foot up in the air and the heel on the ground, and roll on the heel. The roll is continued over the outer side of the foot, and only at the last is the toe used to propel the body forward. Sixty per cent of normal walking is on the heel (Fig. 17).

c) One of the best exercises for the back is to balance something on the head while walking. We have noticed that primitive people who carry burdens on their heads as a rule have ideal posture. The reason for this is that the weight is transmitted through the center of gravity, which requires the best carriage.

Comments

Most dentists who finally see an orthopedist for the care of their feet have allowed them to get into a serious condition. Moreover, they usually have allowed the knees to become strained until arthritic changes have taken place. If the back is involved, the disability is usually in an advanced condition. The dentist should have prophylactic treatment in time, should have periods of rest, and in every possible way should keep himself in the best physical condition he can to withstand the demands made upon him by his work. When true deformities have occurred, orthopedic treatment is necessary. This treatment should be essentially conservative, and if possible should be carried out while the dentist is still able to do his work.

At the present time we are all subject to some of the described symptoms, for occupational reasons as already established, and because of the increased demands made on us as a result of the war. The amount of physical strain and stress has increased greatly for everyone, as has the amount of nervous fatigue which is a factor in causing general fatigue. In this connection, relaxation is important. Development of other interests as a hobby to act as a diversion from the occupational strain is advisable. Periodic rests are a great help in decreasing the strain, and regular and graduated exercises are important in increasing the strength. Strenuous exercises should be avoided since they may do more harm than good. Regular exercise is important. Swimming is a good exercise inasmuch as it is carried out in a horizontal position and can be carried out regularly in a pool. Gardening, golf, and even tennis, are good exercises. They are done outdoors and act as a diversion at the same time. They should not be overdone, however, but should be kept within the person's capacity. Inasmuch as the dentist is predisposed to strain, and some detrimental effects which may lead to serious complications, in my opinion it is well for him to carry out prophylactic measures consisting of periodic rest, regular exercises, and avoidance of continuous strains. If these measures are carried out, orthopedic treatment for functional decompensation will not be necessary.

720 *North Michigan.*

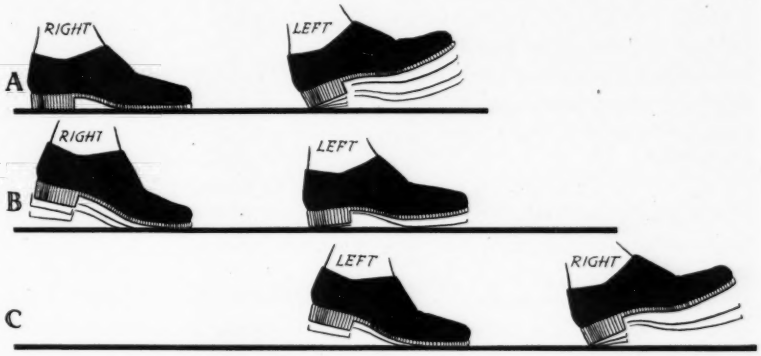


Fig. 17—Correct walking: (A) Place the heel on the ground with the front of the foot in the air. (B) Roll on the heel, then on the outer side of the foot. (C) Propel the body forward with the toes of the foot.

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We hope that you will accept this invitation!

Immediate Dentures Under Nitrous Oxide-Oxygen Anesthesia

LOUIS R. RUFFINE, D.D.S., Richmond Hill, Long Island

A technique for the placement of an immediate upper denture under nitrous oxide-oxygen anesthesia is illustrated, and the advantages of the technique are presented.

THE FACTORS predominantly inherent in the patient's mind, fear of surgery and fear of being edentulous, are eliminated by immediate placement of dentures under nitrous oxide-oxygen anesthesia.

Technique

The illustrations show the patient before the extractions are made, the operation, insertion of the denture while the patient is under anesthesia, and the appearance of the maxillary gingival ridge two weeks after operation.

The illustrated procedure is a common practice in my office. It is not too difficult a technique for any dentist who is capable of anesthetizing a patient for twenty-five minutes and is familiar with the construction of immediate dentures.

Advantages of Technique

1. Functions of speech and mastication are not impaired.
2. Ridges and alveoli are conserved; and muscle fatigue, particularly in the temporomandibular region, and attendant annoyance of impaired hearing, are eliminated.
3. Facial contours are maintained.
4. Pressure of dentures stimulates tissue repair, reduces resorption, and causes deposits of bone.
5. The denture prevents hemorrhage by acting as a splint.
6. The denture prevents food and foreign substances from entering the sockets.
7. Postoperative pain is less marked when general anesthesia is administered than when local injections are made.

118-02 *Liberty Avenue.*

Illustrations 2 - 3 - 4 - 5 appear on following two pages.

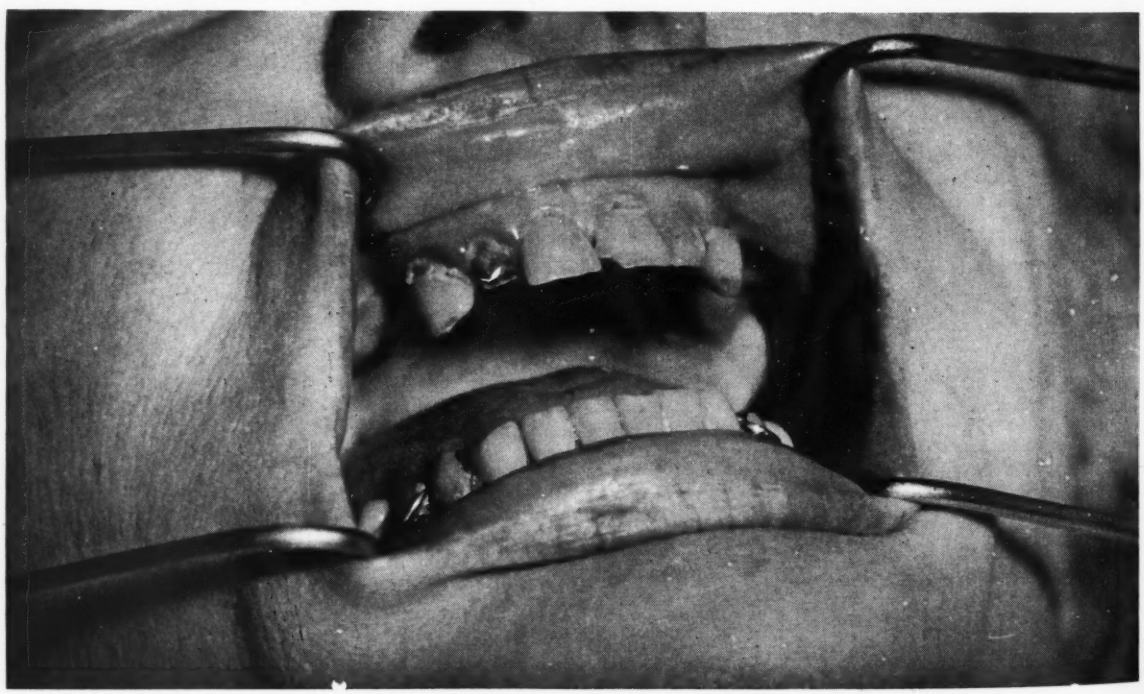

Fig. 1—Six anterior teeth before operation.

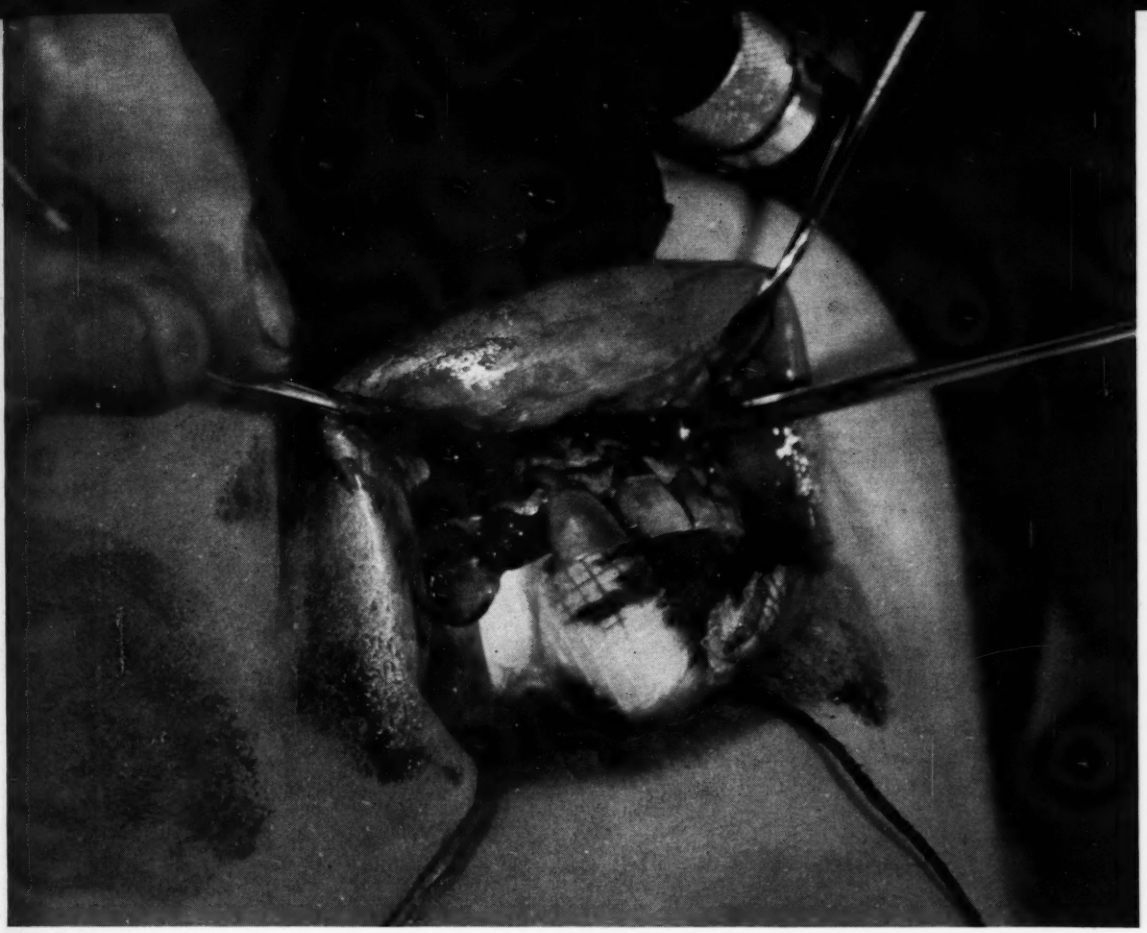

Fig. 2—The tissue flap is lifted previous to extraction of the teeth. The patient is under nitrous oxide-oxygen anesthesia.
Fig. 3—Appearance of sockets after removal of the irregular septal bone and smoothing of the edges.

Fig. 4—The immediate denture is placed while the patient is anesthetized.

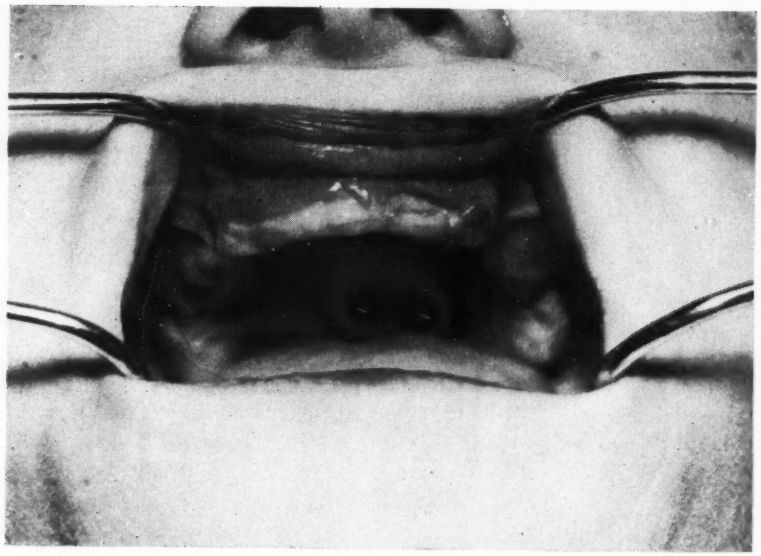

Fig. 5—Appearance of maxillary ridge two weeks after operation.

*Paraffin Packing in the Treatment of Periodontal Disease**

GEORGE CHRISTENSEN, D.D.S., L.D.S., Flight Lieutenant, R.A.A.F.

The technique described here for the application of a dressing with a paraffin wax base in the treatment of periodontal disease is a modification of three previously advocated techniques. The pathologic factors involved in periodontal disease and the effects of the treatment on periodontal pockets and on the gingival tissues, as well as the advantages of the technique, are likewise presented.

THE APPLICATION of a dressing with a paraffin wax base to the gingival tissues in treating periodontal disease was first advocated by Dunlop. This method, although extremely conservative, was to a large extent empirical until Harold K. Box of Toronto placed the various procedures on a scientific pathologic basis. The ideas were then taken up by Gottlieb and other members of the Vienna school, and were modified and improved by them. The technique presented here is a further modification of both of these. It is adapted to fit into any type of periodontal treatment, conservative or radical.

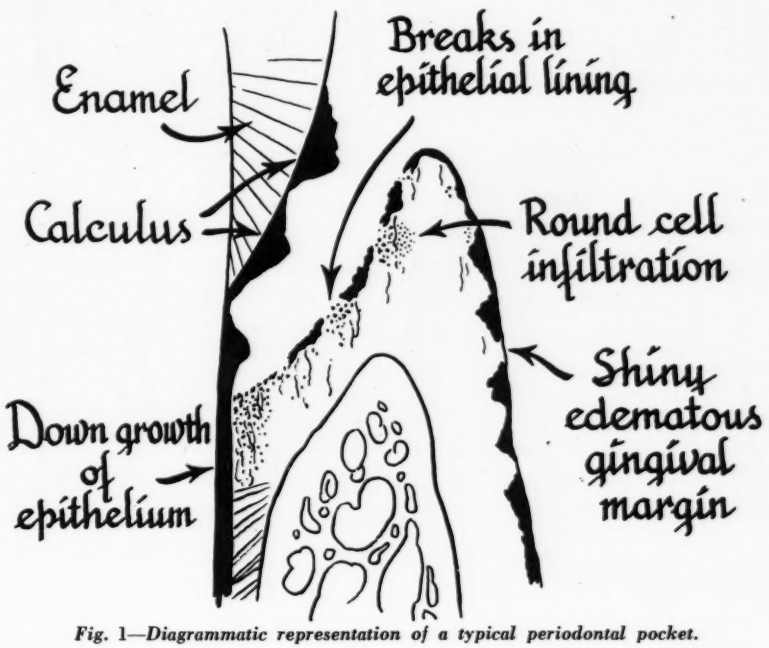

Fig. 1—Diagrammatic representation of a typical periodontal pocket.

Pathologic Factors

Edema—Edema, the accumulation of fluid, may be classified as: (1) congestive, (2) lymphatic, (3) inflammatory, (4) toxic, and (5) neuropathic. Clinically, it is one of the most common pathologic processes in the gingival tissues. It occurs to some extent in almost every mouth, and is identified by the shiny appearance seen on drying the gingival margin.

Edema in the mouth generally is due to interference with the normal

*Adapted from *The Australian Journal of Dentistry*, 48:188 (December) 1944.

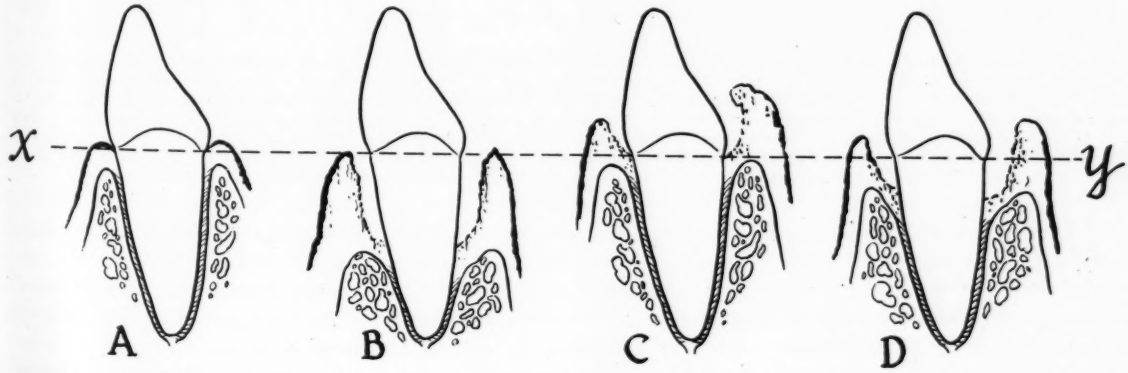

Fig. 2—The reference line XY marks the position of the base of the gingival crevice. (A) Normal gingival crevice; (B) true periodontal pocket; (C) false periodontal pocket; and (D) combined pocket.

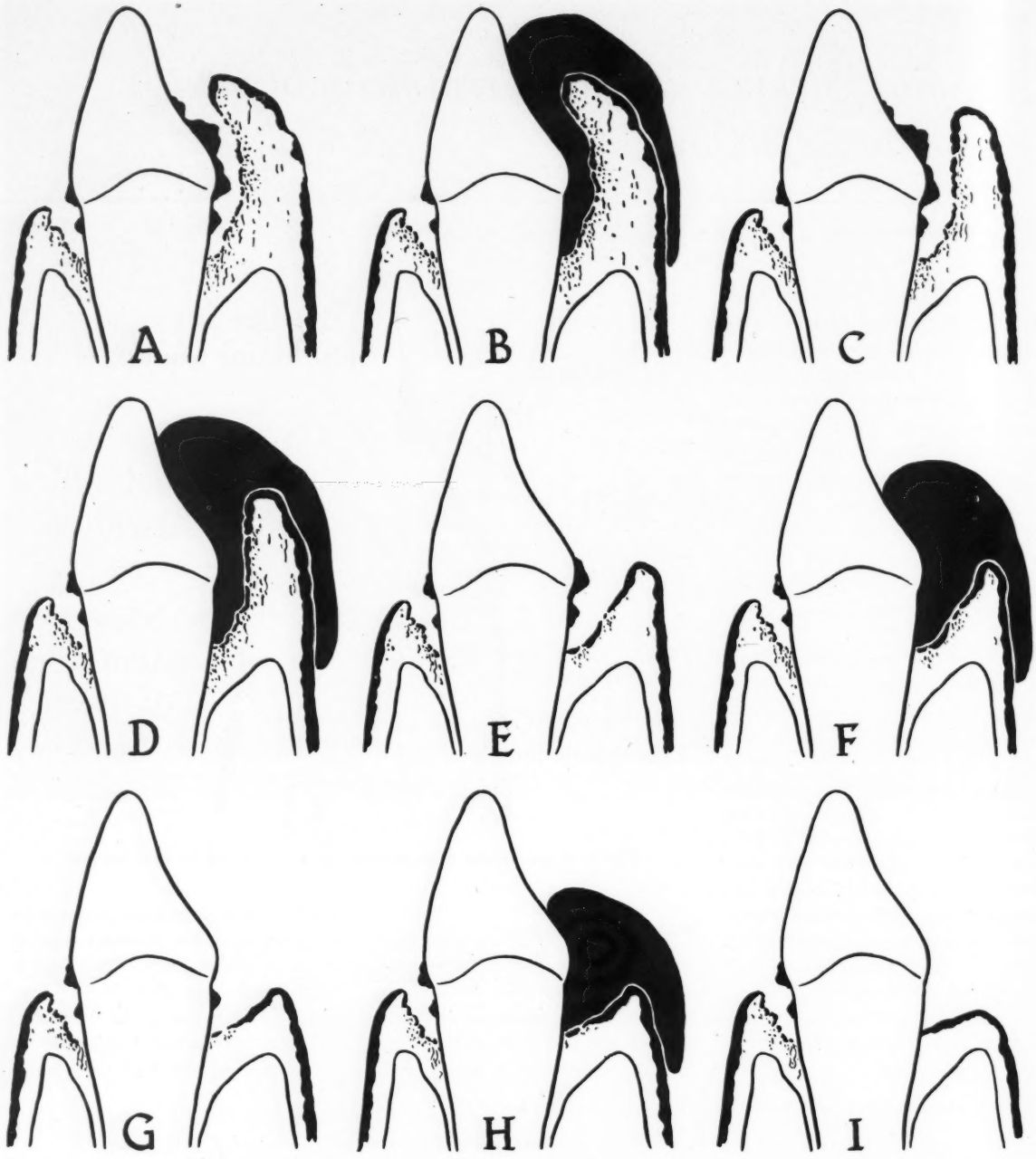

Fig. 3—Treatment of periodontal pocket. (A) Typical lingual periodontal pocket: Soft tissues standing out from the tooth. (B) Wax packing applied to tooth: Highest nodule of calculus visible; can be removed easily. (C) Wax packing removed after 24 hours: Slight reduction of edema has reduced height of gingival margin. (D) Fresh wax packing applied: Height of gingival margin considerably reduced. (E) Packing removed after another 24 hours: Deeper nodules of subgingival calculus now plainly seen. (F) Third packing applied: Epithelial breaks have begun to heal. (G) Wax removed after 24 hours: Diminution in number of lymphocytes. (H) Fourth packing applied: Epithelial lining of crevice almost complete; round cell infiltration almost disappeared; pocket considerably shallower; deeper calculus visible. (I) Finished result: All pathologic conditions eliminated.

blood supply. Oxygen requirements of the cells are supplied by the oxyhemoglobin in normal circulation. In periodontal disease, however, a state of chronic inflammation and slow circulation causes a stagnant anoxia. The availability of oxygen to the cells is diminished; normal cell metabolism cannot go on to completion; and instead of carbon dioxide being formed as an end product of metabolism, intermediate metabolites are formed. These intermediary acids in the tissues alter the osmotic pressure of the cell membrane, and water passes into the cells to produce edema. Furthermore, the oxyhemoglobin is deprived of more than its normal amount of oxygen in order to supply the oxygen requirements of the cells. This results in the bluish

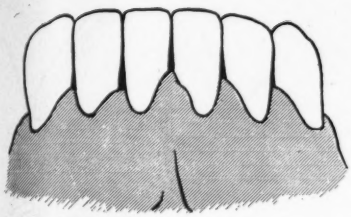

Fig. 4—Teeth to be ligated and packed with paraffin.

red cyanotic coloring seen in the gingival and alveolar mucosa.

Pathologic Picture of a Periodontal Pocket — The chief characteristics found in all pockets are shown in Figure 1:

1. Space between the soft tissues and the tooth.
2. Calculus adhering to the dental wall of the pocket.
3. Breaks in the epithelial lining of the pocket, usually opposite a nodule of calculus. These breaks may be caused by trauma during eating.
4. Small ulcers (around epithelial breaks) which give rise to pus formation.
5. Marked round cell infiltration around the epithelial breaks.
6. Rich capillary beds near the surface of the pocket.
7. Downgrowth of the epithelial lining.
8. Edema of the gingival margin.

Types of Periodontal Pockets—The normal gingival relationship of the soft tissues to the tooth is one on which there is a zero crevice (A in Fig. 2). In practice, of course, this is rarely encountered.

Pocket depth is an unreliable factor in the indication of the treatment or prognosis of periodontal disease. Inasmuch as a periodontal pocket is merely a space between the soft tissues and the tooth, it is easily understood that this space can be produced in one of the following ways:

1. Detachment of the soft tissues from the tooth (B in Fig. 2). (True periodontal pockets.)
2. Swelling of the gingival margin (C in Fig. 2). (False periodontal pockets.)
3. A combination of both of these factors (D in Fig. 2).

Pocket depth is of value in the case of the true pocket. In the case of the false pocket due to edema, however, it is no criterion; when the edema is reduced, the pocket is obliterated. In the combined pocket, a false conception may be obtained because part of the depth is due to gingival edema.

Effects of Paraffin on Periodontal Pockets

It will be seen that paraffin packing has a direct application to all the factors found in a typical periodontal pocket (Fig. 3).

1. Space Between Soft Tissues and Tooth: The soft tissues usually lie close to the tooth so that, in the operation of scaling, the calculus is obscured from view and the tissues are lacerated by the scaler, thus causing bleeding and further obscuring the field of operation. If paraffin wax is packed into a pocket under pressure, the soft tissues will be left standing away from the tooth when the wax is removed. This provides greater accessibility and facilitates the scaling.

2. Calculus: Although the wax packing has no direct action on the calculus itself, it indirectly facilitates removal of the calculus by its effect on the soft tissues.

3. Breaks in Epithelial Lining: Wax has an inherent property of aiding growth of epithelium in all parts of the body. It provides a bland, antiseptic continuous dressing over the area to prevent the epithelium from being rubbed against the sharp nodules of calculus, thus enabling the breaks to heal.

4. Small Ulcers: These are affected directly by the wax packing. Besides the action of the bland dressing, the principle of pressure which is used for the treatment of ulcers elsewhere in the body is applicable inasmuch as the wax is forced into the pocket under pressure.

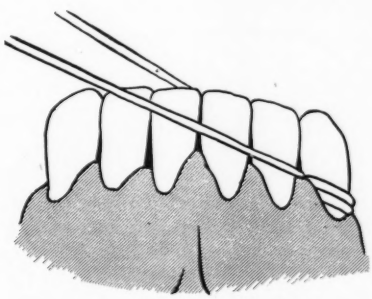

Fig. 5—Commencement of ligating.

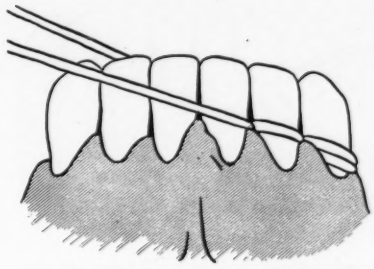

Fig. 6—Progress of ligating.

5. Round Cell Infiltration and Rich Capillary Beds: These are associated directly with breaks in the epithelial lining and with the subsequent ulcers. They are directly benefited by wax packing.

6. Edema: Wax packing eliminates edema by a twofold action: (a) By the direct mechanical application of pressure; and (b) indirectly by aiding the healing of the epithelial breaks by reducing the chronic inflammatory state of the deep tissues and restoring these to normal.

7. Downgrowth of Epithelium: If this is due to the presence of toxins which stimulate the young cells of the deeper layers of the gingival epithelium, causing them to grow downward, then (if the breaks in the epithelium are eliminated) there is no access for toxins into the tissues, and downgrowth of epithelium will be prevented.

If the pocket is a false one due only to edema, it will be obliterated. If, however, there was some detachment of the soft tissues and a crevice still remains, it depends on the operator's judgment whether conditions are such that gingival health can be maintained in that area and an unbroken epithelial lining preserved. Toothbrush massage and toothpick stimulation will be sufficient. If the crevice is too deep, a gingivectomy should be done at this stage.

In this case the tissues have been prepared carefully for surgical treatment. If the gingivectomy were done at the beginning of the treatment, the

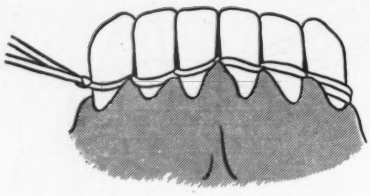

Fig. 7—Ligating completed.

operation would be surgically unsound; the mere cutting away of edematous, swollen tissue to a hypothetical margin is not only empirical in the extreme, but pathologically and surgically unsound.

Effects of Paraffin on Gingivae

Clinically, changes in the gingival tissues occur in: (1) color, (2) contour, and (3) consistency.

Color—Color is one of the primary factors indicating health of oral tissues. In evaluating the gingival health by its color, one must examine the color of the alveolar mucosa in the mucobuccal fold as well as the gingival margin. The tissues should be an even pink from the gingival margin out into the cheek. If the alveolar mucosa is a darker shade than the gingival mucosa, this is an indication of an inflammatory process in the deep tissues.

Inasmuch as color is intimately associated with inflammatory changes, and the inflammatory changes may be due to lesions of the lining of the periodontal pocket, any procedure which benefits these lesions will produce an improvement in the oral color. Clinically, the color changes which take place during treatment by paraffin packing are nothing short of dramatic.

Contour—The contour of the gingival tissues is a valuable indication of the presence or absence of periodontal disease, and may be affected by edema, hypertrophy, or recession.

It is in the reduction of edema that wax packing is of prime importance. It acts mechanically, and by its pressure effect reduces the edema and aids in its reduction indirectly by benefiting the healing of the conditions responsible for the inflammatory reaction and the edema. Furthermore, the reduction of edema considerably aids scaling; the subgingival calculus becomes supragingival and can be removed easily. The pressure effect is also of value in hypertrophy.

Clinically, the reduction of edema by paraffin packing is equally as dramatic as the color change. The edematous gingival margin actually melts away, giving the appearance of a bloodless gingivectomy.

Consistency—The consistency of the gingival tissues is a valuable diagnostic aid. Healthy gingival tissue should be firm and resilient; changes may take place to make it hypertrophic or edematous. Here again the change in consistency is an outstanding feature after paraffin packing. Soft tissue which previously could not be touched with a blunt instrument without bleeding can withstand the most vigorous onslaughts with a scaler or with toothpicks.

Armamentarium

The wax used is a bland, mildly antiseptic preparation, stable in the mouth, and softens at approximately 130° F., at which temperature it can be applied under pressure into a periodontal pocket. It will remain in position up to forty-eight hours. The formula of the wax is as follows:

Paraffin (hard), 1 part
White wax, 6 parts } 3 drams
Resin .....3 grains
Cod-liver oil .....1 drop
Oil of peppermint .....1 drop

The wax is made into sticks and is applied by means of a metal syringe similar to a dental hypodermic syringe with a nozzle approximately the size of the aperture in the needle adapter. The original Dunlop syringe is of metal with a gooseneck adapter designed to be universal in its application. A syringe can, however, be made from an old metal hypodermic. The nozzle can be made by bending the long needle adapter to an angle of approximately 30 degrees and flattening the end to facilitate its entry into the interproximal spaces.

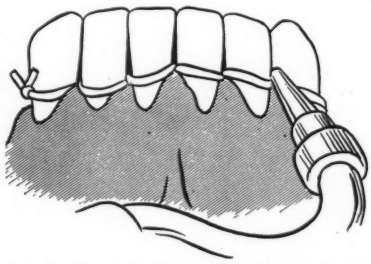

Fig. 8—Position of syringe for wax packing.

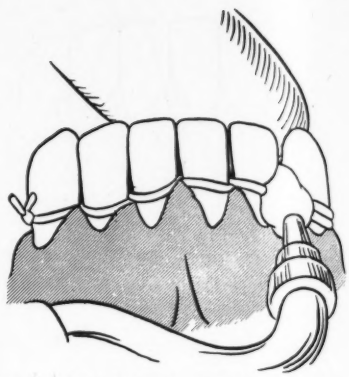

Fig. 9—Wax being forced interproximally.

Technique of Paraffin Packing

1. The syringe containing the paraffin is immersed in water of 125° F. to 130° F. This softens the wax sufficiently for it to be forced under pressure into the crevice and interproximal spaces.

2. The paraffin wax is applied down to the base of the pocket by means of a metal syringe.

3. The wax is applied from the labial aspect with the nozzle of the syringe actually in the periodontal pocket. The wax is squeezed out until a large amount of it is forced through to the lingual aspect, and then, while still squeezing, the nozzle is withdrawn, leaving a surplus on the labial aspect. This bulk of wax is squeezed together by means of the forefinger and thumb.

Ligating and Packing

In order to ensure the packs remaining in position for the desired time, they can be reinforced by a floss silk ligature (Figs. 4 through 11). A piece of waxed floss silk is tied at the center around the base of the last tooth of the area to be packed. Then the silk is brought forward in the form of a continuous ligature with one strand passing lingually and

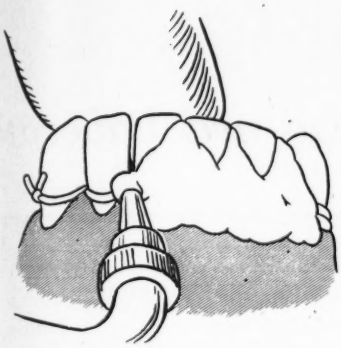

Fig. 10—Progress of packing.

the other labially. A knot is made in each interproximal space. When the wax is forced into the pocket, it flows above and below the knots, which serve to lock the pack in place.

After completion of packing, it is advisable to run a hot instrument over the surface of the packs to weld them into one solid dressing.

Advantages of Paraffin Packing

1. It can be used with advantage in both conservative and radical treatment.
2. A valuable adjunct to scaling.
3. Obliterates false pockets by reduction of edema.
4. Provides a bland antiseptic dressing for the pocket lining.
5. Aids healing of breaks in the crevicular epithelium.
6. Prevents irritation of pocket wall by calculus.

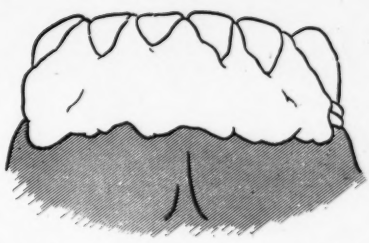

Fig. 11—Paraffin packing completed.

7. Reduces hypertrophy by pressure.
8. Improves tone of deep tissues.
9. A valuable postoperative dressing.
10. Places tissues in best possible condition for surgical treatment.

Three Insufficiently Utilized Operating Aids

K. McALLISTER, L.D.S., Liverpool

The Operating Stool

The benefits which result from the use of an operating stool—energy conservation, sustained interest, and better work—are marked. With practice for a day or two, its use becomes second nature, and every type of dental operation can be performed sitting down, including those under a general anesthetic. The only times the operator need stand are at the beginning and end of an appointment.

Fixed at a comfortable height, the operating stool is placed in such a position that by raising, lowering, tilting, or swiveling the chair, all parts of the mouth can be made freely accessible. Everything must be within reach: Getting up, and taking a step or two to the cabinet, are unnecessary movements.

The cabinet, although close to the stool, should allow room for swiveling the chair in a fairly wide arc. Commonly used articles, other than instruments, can be placed on a table behind the chair. A small bowl and towel can be placed on the lower shelf for the operator to rinse and dry his hands if soiled during an operation. A stool on the other side of the chair can be used by the assistant while mixing and handling restoration materials, gingival packs, and other equipment.

The Headlamp

The headlamp can be run off the main current, or from a pocket battery or accumulator (the latter are more trouble). The lamp gives a bright, shadowless illumination of all parts of the oral cavity, and the area of illumination can be confined to the mouth itself. The headlamp

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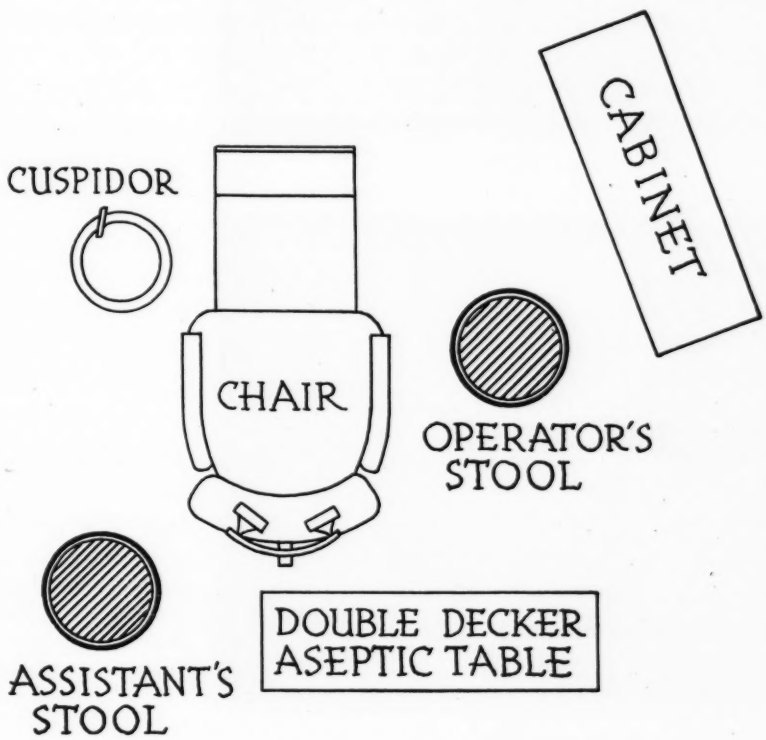

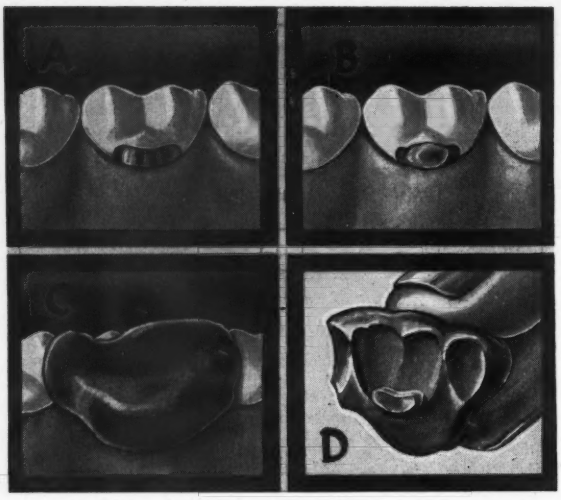

Fig. 1

An Aid in the Cementation of a Gold Inlay

Charles E. Richardson, D.D.S., New York

Fig. 1—The casting is placed in the cavity (A); a drop of sticky wax is added to the inlay (B); and a modeling compound matrix (C) is adapted over the inlay. When the modeling compound is chilled and removed, the inlay (D) is held in position in the compound. This technique produces a convenient "handle" for holding the inlay during the cementation procedure.

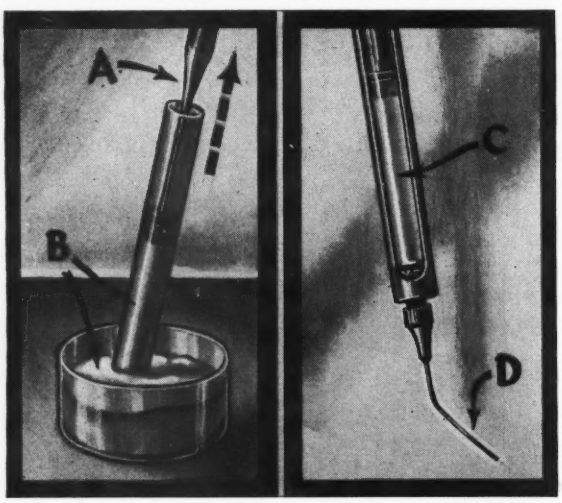

Fig. 2

An Applicator for Therapeutic Ointments

Lieutenant Philip E. Shipper (DC) AUS, Camp Cooke, California

Fig. 2—Sterilize an empty procaine tube and remove the needle end stopper. Push the sliding rubber stopper down into the tube. Place the end of the procaine tube in the ointment and, using a hooked explorer (A), pull the stopper upward. The suction created draws the ointment into the tube (B). Insert the ointment-filled tube (C) in a metal syringe. A dulled needle (D) is used to inject the ointment into pockets, tooth sockets, and under pericoronal flaps.

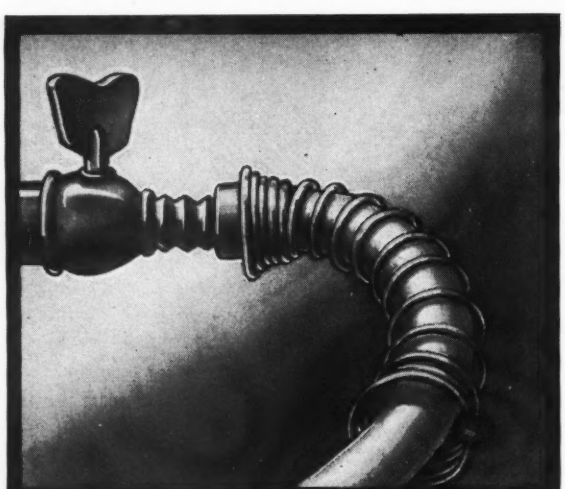

Fig. 3

Preventing Twisting of Rubber Tubing

Myrton J. Billings, D.D.S., Brooklyn

Fig. 3—The wire spring from a discarded electric iron is used over the rubber tube leading from the gas outlet to the blowpipe. This prevents sharp bends in the tube and permits an uninterrupted flow of the gas.

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A Convenient and Sterile Container for Instruments.

William E. Watson, D.D.S., Minneapolis

Fig. 4—A discarded glass procaine tube (A) is marked at a convenient length with a file, and the glass is broken at this point. Loose cotton saturated in alcohol is placed in the sterilized tube. (B) Insert a needle through the cotton, inserting the point of the needle in the rubber stopper. (C) A scalpel can be inserted through the cotton in the same manner, sealing the point in the rubber stopper.

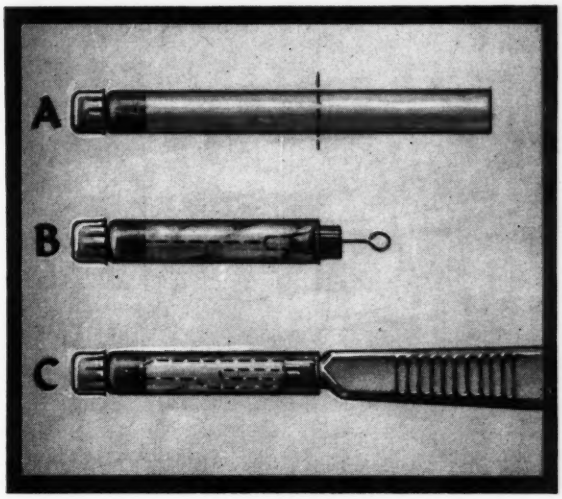

Fig. 4

An Ordinary Paper Clip Fashioned into a Double Sprue

Abraham H. Glick, D.D.S., Chillicothe, Ohio

Fig. 5—An ordinary paper clip (A) is cut as indicated in (B). The arms of the clip are crossed (C) and are fastened to the marginal ridges of a three-surface inlay pattern. The loop which is formed is a convenient handle to aid in the removal of the pattern without distortion. The point where the two arms cross forms the bottom of the crucible former after investment (D). The two arms of the clip are cut, and the pins are then withdrawn separately from the investment.

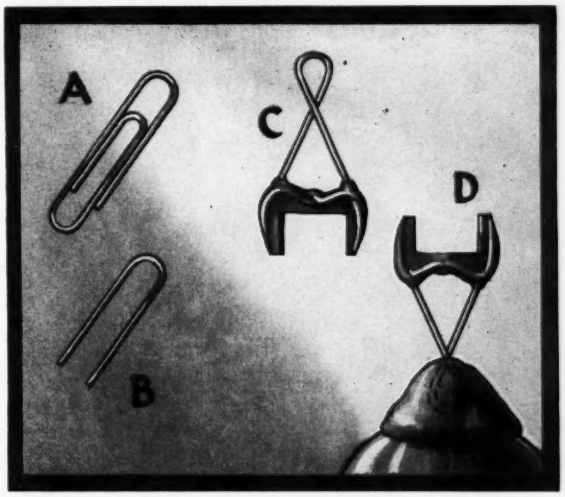

Fig. 5

Removal of Three-Quarter Crowns Without Destroying the Margins of the Casting

Captain Joseph E. Spiezio (DC) AUS, Camp Hood, Texas

Fig. 6—(A) When waxing three-quarter crowns, place a small spur of wax in the cingulum area. (B) When the casting is made, this spur offers a convenient attachment for easy withdrawal of the casting. It also acts as an "index" to keep the casting in the proper position in the impression if a fixed bridge is being constructed. The spur is, of course, removed when the case is finished.

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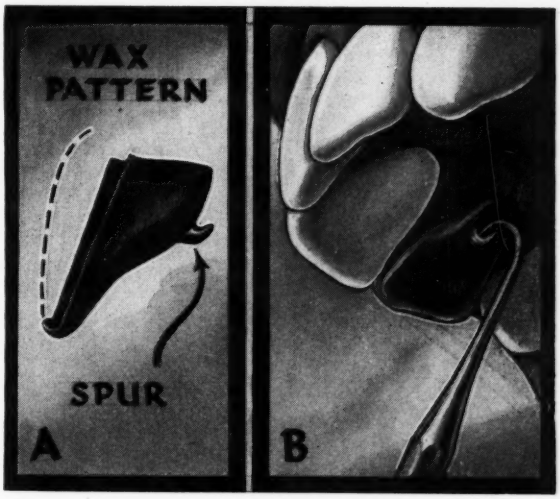


Fig. 6

of the technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time.

Send your ideas to: Clinical and Laboratory Suggestions Editor, THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

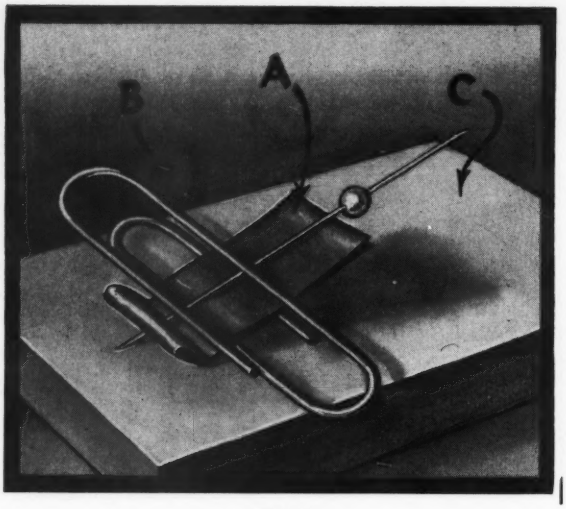


Fig. 7

Obtaining Properly Beveled and Sharper Hypodermic Needles

B. H. Scheffer, D.D.S., Chicago

Fig. 7—Double a piece of copper matrix lengthwise (A) so that it is 1½ inches long and ½ inch wide. Using the smallest hole of a rubber dam punch, make a hole through both thicknesses of the matrix ¼ inch from the folded end. Bend the matrix at right angles at the hole. Insert the point of the needle through the hole and lay the rest of the needle flat on the matrix. The needle is held firmly in place with a paper clip (B). The needle can thus be sharpened and beveled to the desired angle by rubbing it firmly on a sharpening stone (C).

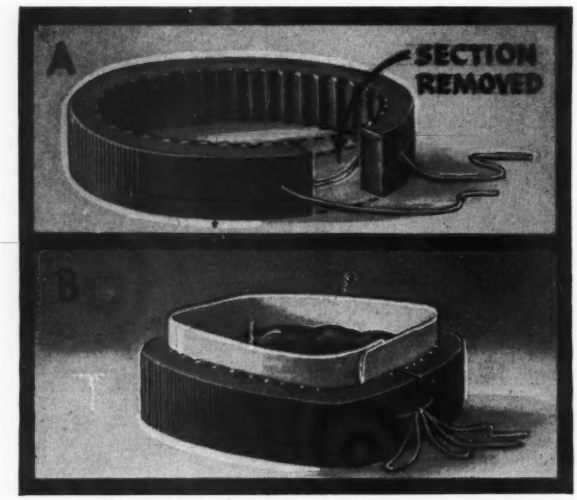


Fig. 8

An Aid in Boxing Impressions

Rosalie Carter, D.D.S., Franklin, Tennessee

Fig. 8—(A) A 1-inch section is cut out of a rubber fruit jar cover remover, and a strong cord is run through holes punched through the rubber as indicated. (B) The impression is wrapped in folded paper, and the rubber ring is tied tightly around the impression. This technique saves the operator's time and also saves wax.

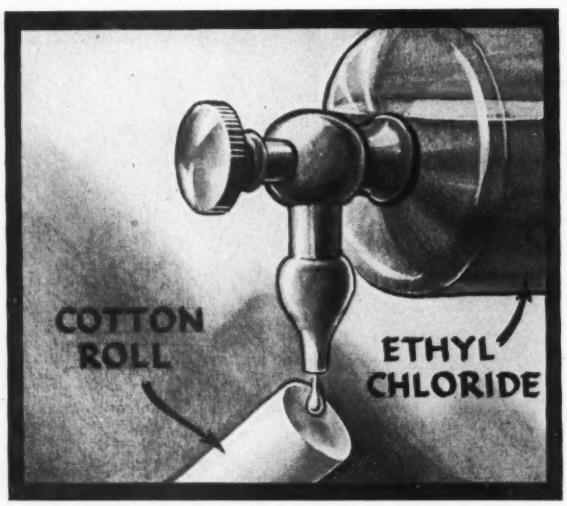


Fig. 9

A Satisfactory Pulp-Testing Method

H. H. Aaser, D.D.S., Sebeka, Minnesota

Fig. 9—A few drops of ethyl chloride are placed in the end of a number 2 cotton roll. This makes a satisfactory substitute for a cube of ice in testing a tooth for pulp vitality.

SUGGESTIONS (*Continued from page 313*)

A Remodeled Bur for Removing Old Amalgam Restorations

Lieutenant John L. Keener (DC) USNR, Washington, D. C.

Fig. 10—Using a heatless stone (A), reshape an old number 562 or larger crosscut fissure bur as indicated in (B). This remodeled and sharpened bur can be used effectively to remove old amalgam restorations.

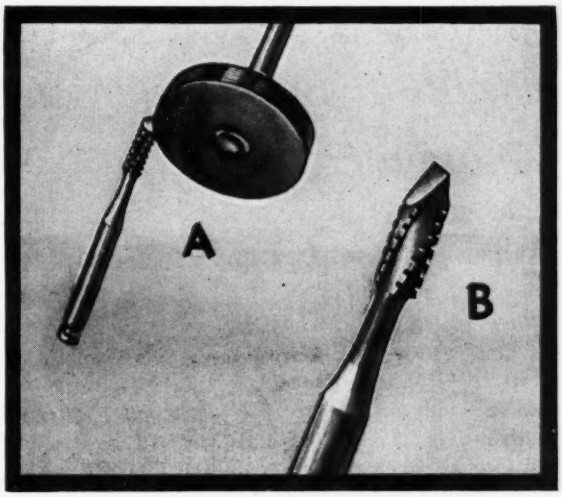


Fig. 10

A Method of Removing Alginate Impression Material from Perforated Trays

M. Da Costa Gomez, D.D.S., Pomona, California

Fig. 11—The alginate impression material, after it sets, frequently adheres to the perforated tray and is hard to remove. Place the perforated tray in boiling water to which sodium bicarbonate (baking soda) has been added. This solution will dissolve the impression material and leave the tray clean and sterile.

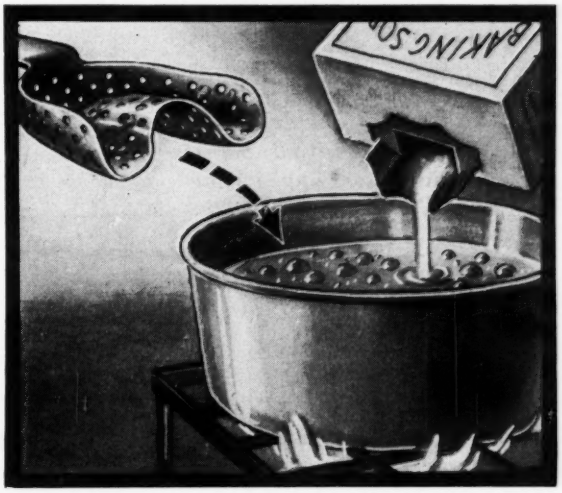


Fig. 11

Calibrating a Cartridge Type Syringe

R. J. Coggeshall, D.D.S., Rochelle, Illinois

Fig. 12—It is frequently advantageous for the dentist to know exactly how much solution he is injecting. The plunger of the cartridge type syringe may be calibrated by marking it with a carborundum disc while injecting the solution into a Luer glass syringe which is used as a volume measurer.

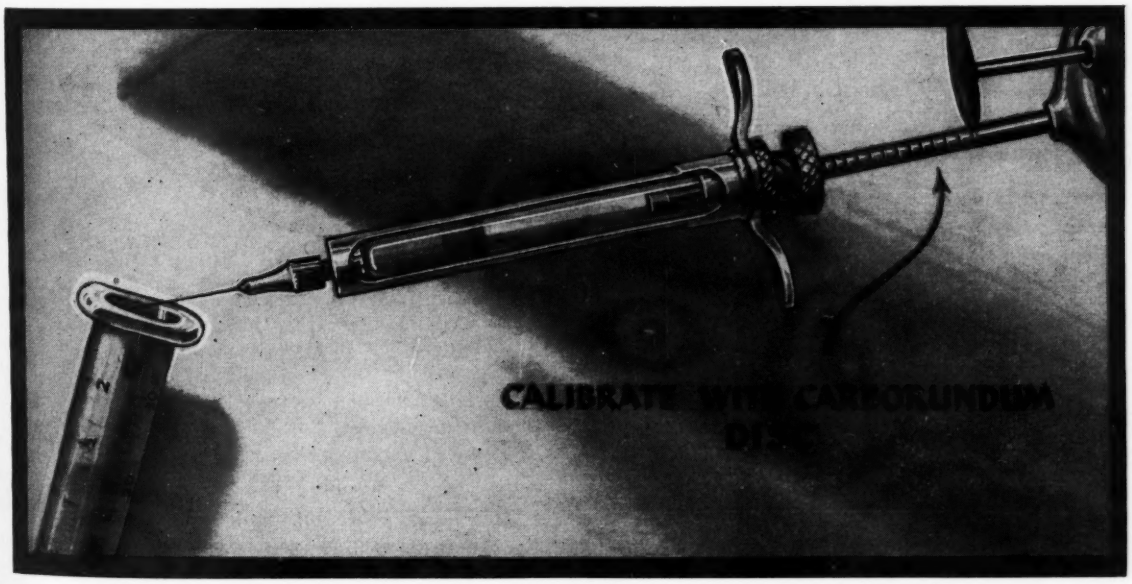


Fig. 12

Occlusal Reconstruction Using an Anatomic Technique

JEROME M. SCHWEITZER, D.D.S., New York

The reconstruction of occlusion is demonstrated in the step-by-step technique followed in replacing the four upper incisors with a fixed bridge. The points of interest are:

1. Taking a kinematic face-bow registration of the lower teeth instead of the upper teeth.

2. The use of temporary cast gold splints on the posterior teeth during reconstruction.

3. The use of blades in cutting the lower occlusal paths.

4. Making a fixed upper eight-tooth anterior bridge using four abutments.

5. The use of surgery as an adjunct in the reconstruction procedure.

Case History

The patient, a woman aged 35, was missing the four maxillary incisors and had severe periodontoclasia. No other teeth were missing. Roentgenograms and photographs were taken (Figs. 1 and 2). The roentgenograms revealed infection in the upper left first molar, which was marked for extraction.

1. Hydrocolloid impressions were taken and stone models poured (Figs. 3 and 4). After careful study of the models, it was decided to reconstruct the entire occlusion.

2. Duplicate impressions were taken from the stone models. A kinematic face bow registration was taken, and the centric relation was established. The lower models were mounted on an adjustable instrument by means of the kinematic face bow registration (Fig. 3). The upper model was mounted to it by means of the centric relation wax impression (Fig. 4). The models were studied again on the adjustable instrument.

3. Temporary splints were cast to cover all the lower posterior teeth. These splints were made with 27-gauge wax and were cast in gold (Figs. 5, 6, and 7).

4. Three wax bites showing the protrusive relationships were taken. By means of the protrusive wax the average sagittal registration was computed to be 35 on the right and 29 on the left. The lateral shaft inclinations were then computed to be 16 on both the right and the left.

5. The cusp relation was studied carefully, and the cusps which interfered were marked for removal. They were removed from the model and then, using the model as a guide, they were removed from the mouth. The splints were then placed over the lower posterior teeth (Fig. 8). Thus the patient is comfortable during treatment, a good biting surface is prepared, and the operating time is shortened.

6. Inasmuch as there were no upper anterior teeth present, the upper cuspids were used to establish incisal guidance. The central occlusal groove of the lower posterior teeth on the model from the third molar to the first bicuspid was marked by a continuous pencil line on both sides. A thin metal safety razor blade was laid along this line. The deep point of the blade touched the mesial ridge of

Fig. 1—Photograph taken before the reconstruction. Severe periodontoclasia is evident; the anterior four-tooth clasp bridge has little support and has caused severe resorption of the anterior alveolar ridge and separation of the teeth.
Fig. 2—Anterior bridge removed. Note erosion of cuspids and alveolar destruction caused by clasps.

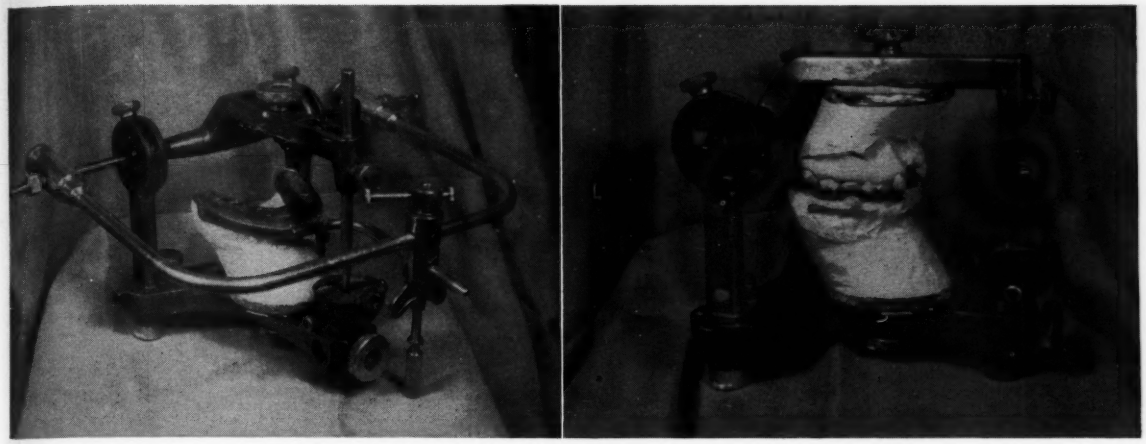


Fig. 3—Lower model mounted on articulator by means of kinematic face bow registration. The kinematic face bow locates the center of rotation of the condyles in the glenoid fossa and is used in conjunction with the lower model.
Fig. 4—Upper model mounted to the lower model by means of centric relation established in wax.

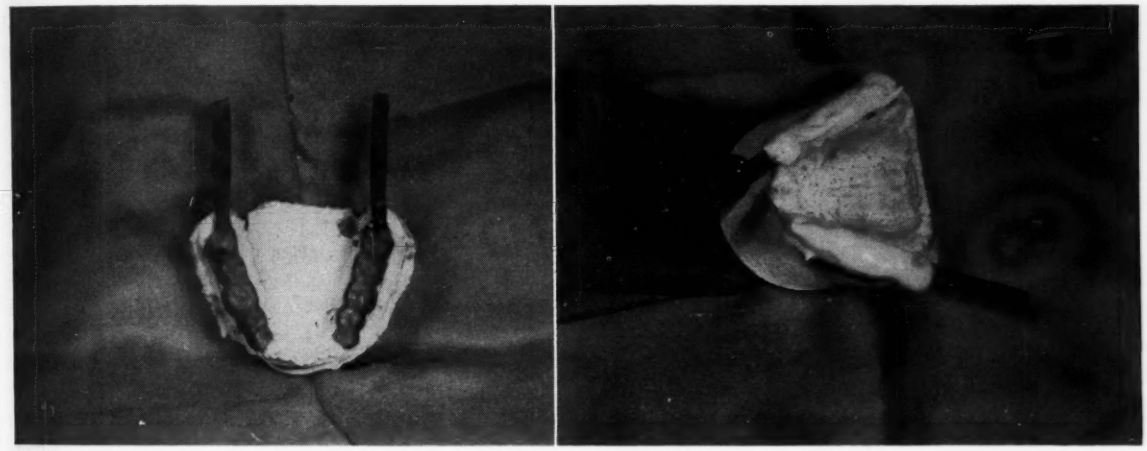


Fig. 5—Lower five posterior teeth on each side covered with 27-gauge wax.
Fig. 6—First investment of cristobalite painted on. When it hardens, the wax is removed from the model and the second investment is applied. The splints are then cast in gold.

Fig. 7—Gold splints in place on model to check the articulation. These splints will be introduced into the mouth.
Fig. 8—Splints cemented in mouth with temporary cement. The old restorations will be removed from the lower posterior teeth, and as each section is removed the splint will be reintroduced over the prepared teeth.

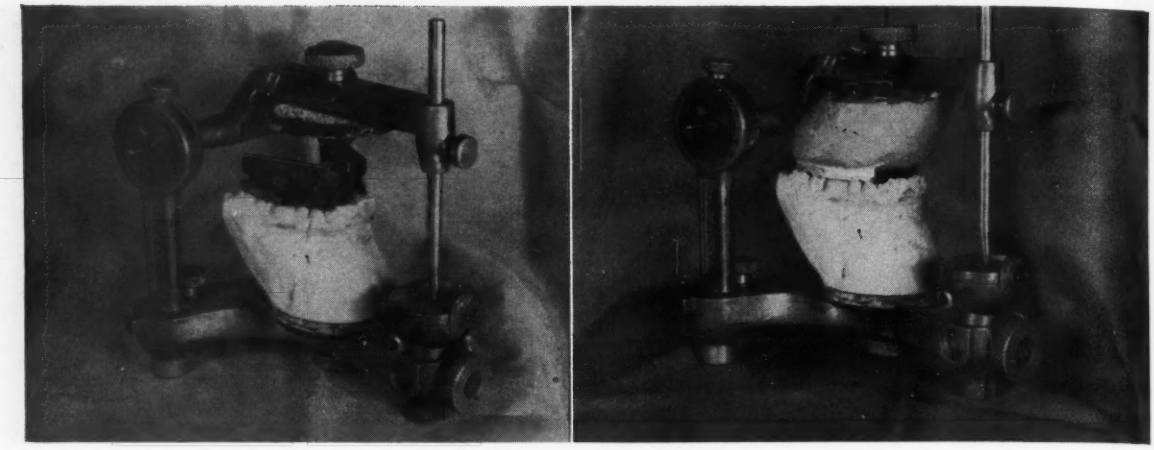


Fig. 9—Upper model removed. Two razor blades set in the central grooves of lower posterior teeth and shaped to conform with the anteroposterior curvature.
Fig. 10—Blades boxed in wax, and stone poured into boxing to join the blades to the upper articulator arm.

the bicuspid and the distal ridge of the molar. The two blades were waxed to the model (Fig. 9). The blades were boxed and were attached to the upper articulator arm by means of stone. These blades were used later as guides for the anterior-posterior and lateral cusp paths and inclinations (Fig. 10).

Preparation of Lower Teeth

1. The lower posterior teeth were prepared for the following restorations: The lower right third molar for an occlusal gold inlay; the lower right second molar for a mesio-occlusal inlay; the lower right first molar for a gold crown; the lower right first bicuspid for a disto-occlusal gold inlay; the lower left third molar for an occlusal inlay; the lower left second molar for a mesio-occlusal gold inlay; the lower left first molar for a full cast gold crown; and the lower left first bicuspid for a disto-occlusal gold inlay.

2. Copper band impressions were taken individually of the prepared teeth and amalgam dies were made.

3. The upper left first molar was extracted. This was done at this time to provide sufficient healing time so that when the upper teeth were ready to be prepared the bony process would be healed well enough to permit the insertion of a fixed bridge without delaying the procedures.

4. At this time also the gingival tissue around the necks of the upper right and left first and second bicuspids was cut away on the labial aspect to expose more of the buccal surface of the tooth. This was done to improve the esthetic appearance.

5. While these preparations were being made, the occlusal gold splints were placed in position with a temporary cement (Fig. 8). A full lower combination compound and wax impression was taken (Fig. 11); the combination of compound and wax is more accurate than if wax were used alone. A new centric relation was established in the wax.

6. The dies were replaced in their respective positions in the lower impression and a model was poured (Fig. 12). This model was substituted for the lower master model on the articulator, and was oriented to

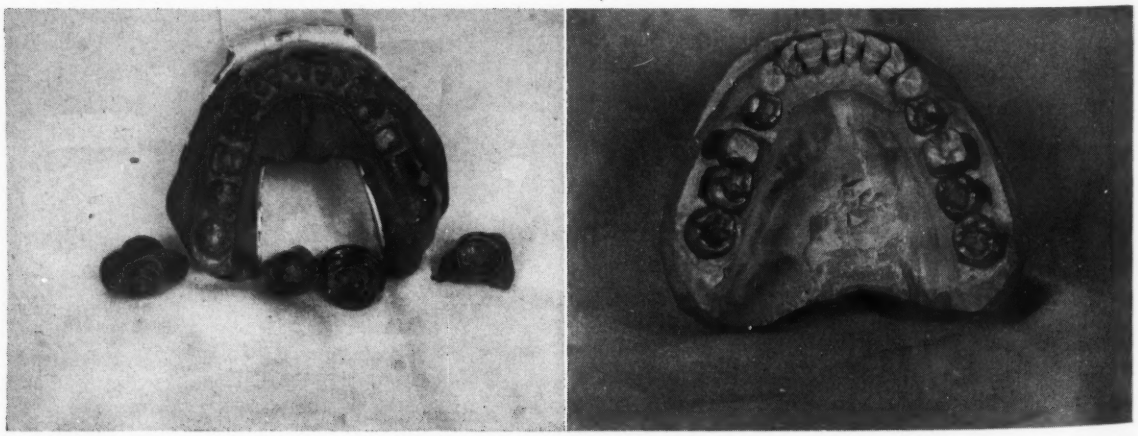
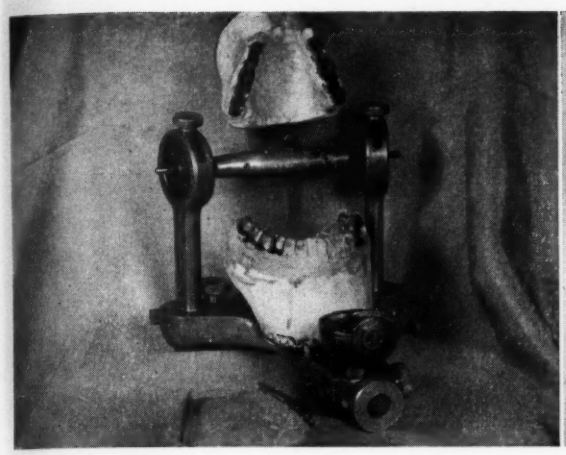


Fig. 11—Combination modeling compound and wax impression. The lower posterior teeth have been prepared and copper band impressions have been taken. The copper bands are now packed with amalgam and the amalgam dies are placed in their respective positions in the impression. A working model is then poured.
Fig. 12—Lower working model to be substituted for lower master model on articulator.



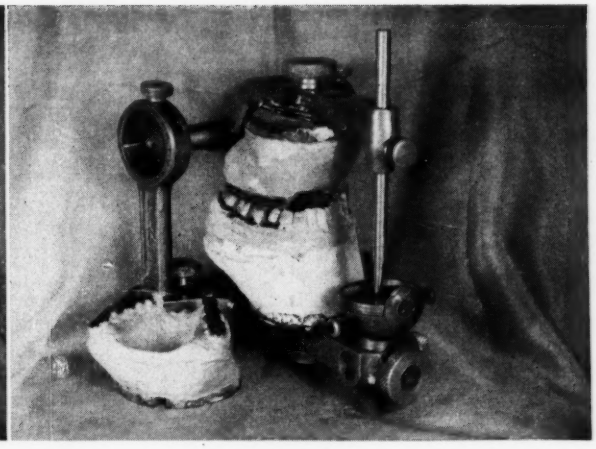


Fig. 13—*Wax added to upper teeth for study to approximate the future occlusal plane.*
Fig. 14—*Upper master model removed and upper member containing blades substituted for it.*

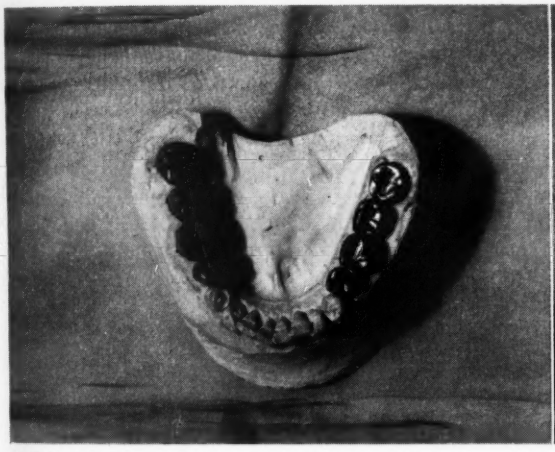


Fig. 15

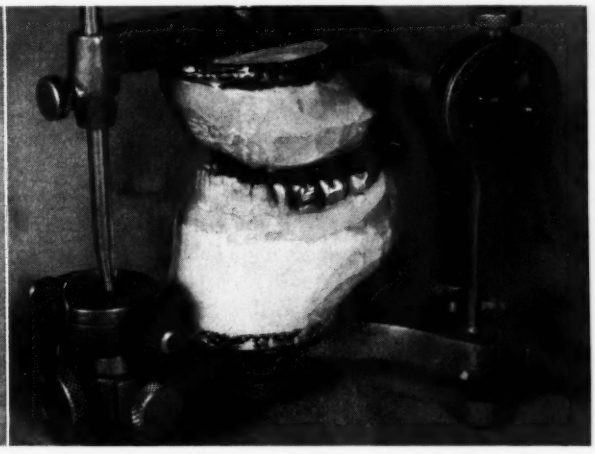


Fig. 16

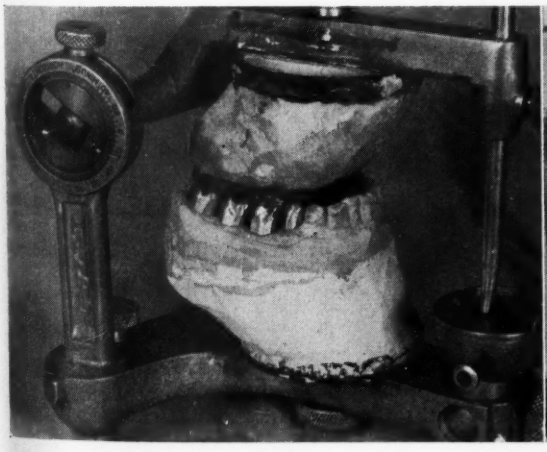


Fig. 17

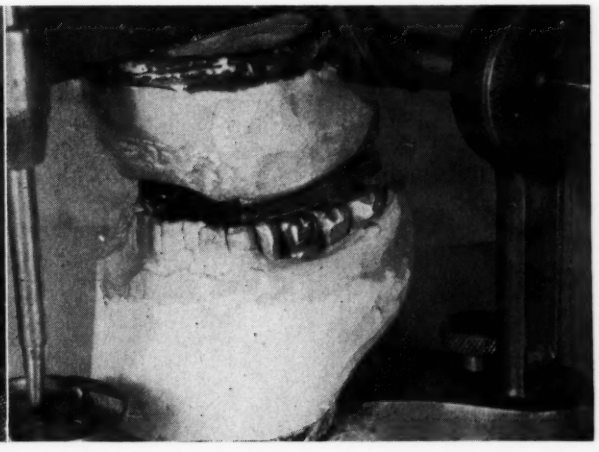


Fig. 18

Fig. 15—*Wax of lower preparations cut by blades anterior-posteriorly to represent the compensating curve and laterally to represent the cusp heights. The markings will be further refined by grooves and sulci to represent more detailed anatomy.*
Figs. 16 *through* 19—*Method of moving the blades to establish the working and balancing bites.* (*Fig.* 19 *on next page.*)

the upper model by means of the new centric relation wax impression.

7. In order to be sure that the upper original impression had no inaccuracies where the cusps had been ground, a new hydrocolloid upper impression was taken and poured in stone. This was articulated to the lower working model on the machine

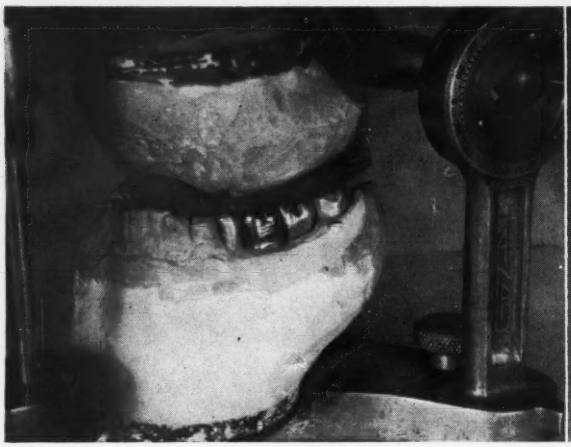


Fig. 19

Fig. 20

Fig. 20—*Occlusal view of completed lower castings ready for try-in in the mouth.*

by means of the centric relation bite previously taken. The lower preparations were now waxed up. The wax was overbuilt. Wax was added to the occlusal surfaces of the upper posterior teeth and the two planes of occlusion were worked out (Fig. 13). This gave a good indication of the direction of the compensating curve.

8. The upper model was now removed from the articulator and the upper model which contained the two blades was substituted (Fig. 14). The blades were first worked in a protrusive movement and then in a right and left lateral movement. By means of the blades engaging the wax, paths were cut into the wax to conform with the individual registrations set on the articulator (Figs. 15 through 19). When this was completed the wax impressions were further individualized for their teeth.

9. The castings were then made (Fig. 20). These abutment castings were now carried to the mouth and tried on the teeth for fit and contact.

10. A new lower plaster impression was taken together with a bite wax. The inlays were removed from the mouth and placed back on the dies. The dies were placed in the plaster impression and a new working model was poured and articulated to the upper model by means of the new bite wax.

11. The lower castings were completed: Acrylic was added to the lower right and left first molars in order to make the gold less obvious; the lower castings were carried back to the mouth and cemented in position; and the lower incisors were ground to a more harmonious incisal plane. The lower gold splints were no longer necessary.

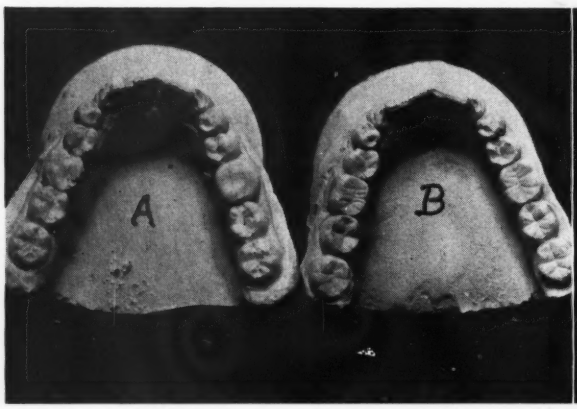
12. A full lower impression was taken in hydrocolloid. This was poured in stone (B in Figs. 21 and 22), and by means of a bite wax was substituted for the old lower working model (A in Figs. 21 and 22). This was done so that when the upper working model would be completed a new face bow registration would not have to be taken.

Preparation of Upper Teeth

1. The upper right third molar was prepared for a mesio-occlusal inlay, the right first molar was prepared for a three-quarter crown, and the right second bicuspid was prepared for a disto-occlusal inlay.

2. Copper band coping impressions were taken of these teeth and a bite was taken.

3. A model was poured and, by means of the bite, the upper working



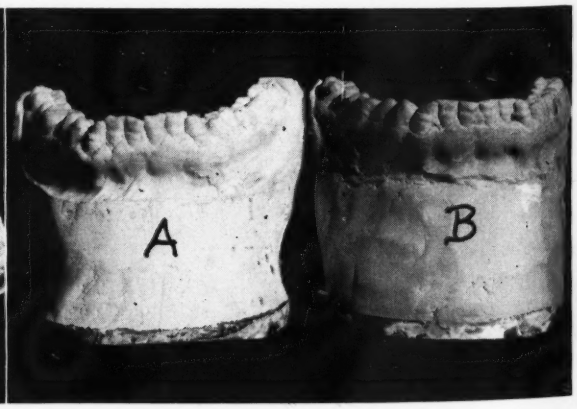


Fig. 21—(*A*) *Occlusal view of original case.* (*B*) *Occlusal view of reconstructed lower case.*
Fig. 22—(*A*) *Original case before grinding the incisors.* (*B*) *Completed lower case showing the extent of reshaping of incisal edges.*

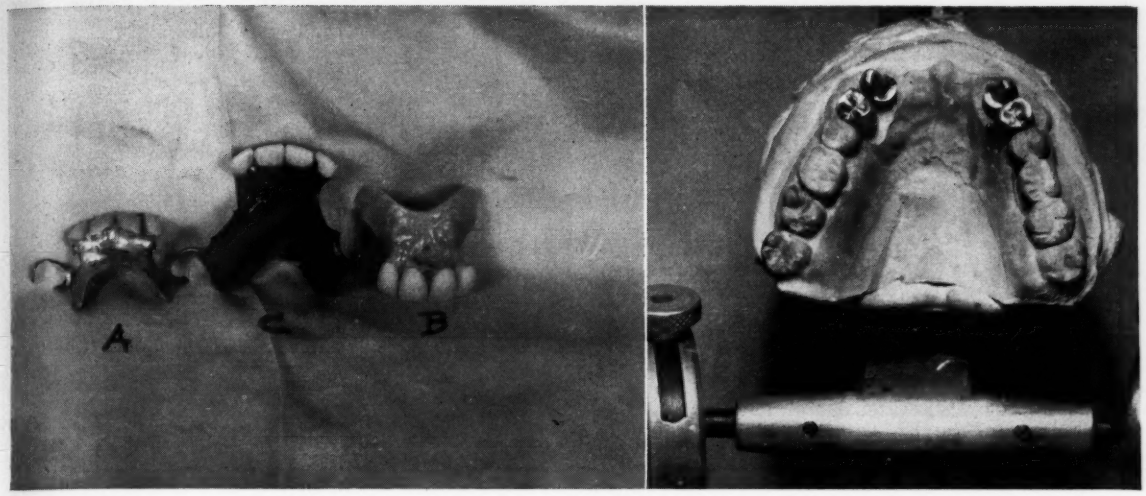


Fig. 23—(A) Original clasp gold bridge worn for several years: Palatal support insufficient; clasps caused tooth separation; no provision to prevent the bridge from being displaced upward, thereby destroying alveolar ridge. (B) Second bridge worn after A for several years, clasps removed; continued the deformities caused by A. (C) Bridge made during reconstruction; clasps were not attached so that gingiva could heal.
Fig. 24—Occlusal view of upper model: Cuspid copings and bicuspid cast crowns in position, and posterior teeth completed.

model was articulated to the lower model. The upper right posterior castings were then completed and, after being fitted in the mouth for contact and fit, the upper right castings (the upper right second bicuspid and the first, second, and third molars) were cemented in position.

4. The upper left third molar was prepared for a bucco-occlusal gold inlay, the second molar was prepared for a mesio-occluso-buccal gold inlay, and the second bicuspid was prepared for a mesio-occluso-distal gold inlay. The inlays in the upper left second bicuspid and second molar were to act as the abutments for a one-tooth fixed bridge.

5. Copper band impressions were taken of these teeth, amalgam dies were made, and the bite was taken. The model was articulated to the lower model on the machine.

6. After the castings were completed, they were fitted on the teeth. After fit and contact were checked, impressions were taken for completion of the one-tooth fixed bridge. When this was completed, the bridge, together with the bucco-occlusal inlay in the upper left third molar, were cemented in position.

Preparation of Upper Anterior Fixed Bridge

Inasmuch as the anterior part of the alveolar bone, where the four incisors had been extracted years previously, had been badly resorbed as a result of the pressure of a small anterior removable bridge (A in Fig. 23), it was thought advisable to replace it with a fixed bridge with as much support as possible. The clasps on the removable bridge had caused severe resorption around the gingival margins of the cuspids and the first bicuspids. The first bicuspids were

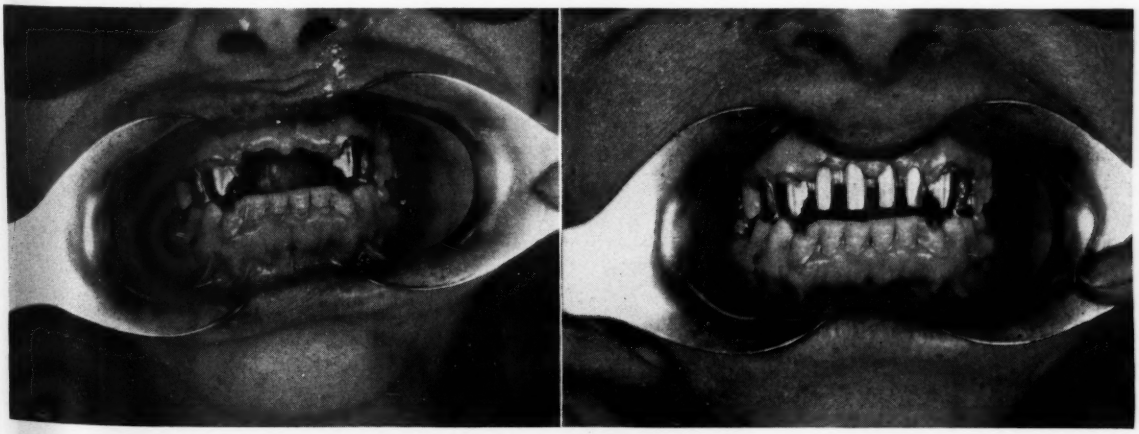


Fig. 25—Abutment castings for anterior bridge tried in the mouth. When satisfactory, a full upper impression is taken, from which bridge is to be completed.
Fig. 26—Bridge assembled in mouth to determine fit. Small plaster impressions are now taken separately of each side and the soldering is done.

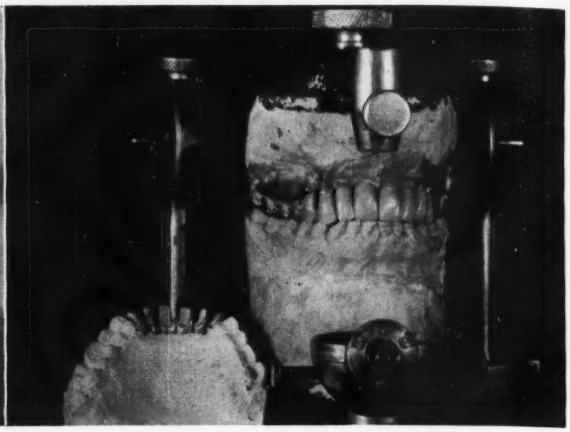


Fig. 27—Porcelain jacket crowns in place on the copings.
Fig. 28—Acrylic has been processed in buccal recess of first bicuspid cast crowns. Porcelain jacket crowns were first made on model in foreground, were then transferred to original model, and the bite refined. Dies for the jacket crowns are available for duplication in case of breakage.

loose and a separation had taken place between the first bicuspids and the cuspids.

1. The first bicuspids were prepared for full cast crowns, and the cuspids were prepared for metal copings which would be covered by porcelain jacket crowns. The abutments were paralleled to each other to facilitate soldering the cuspids and the first bicuspids together, making an eight-tooth continuous bridge. Soldering the four abutments together would serve three purposes: (a) It would prevent further destruction of the alveolar bone beneath the missing anterior teeth; (b) it would serve as a splint for the loose bicuspids; and (c) it would share the strain of the entire load with the cuspids.

2. When the preparations on the abutment teeth were completed, copper band impressions were taken, and a full upper impression was taken. A working model was poured and articulated to the lower working model by means of a new centric relation wax impression.

3. The four abutment castings were made (Fig. 24). When these castings were completed they were tried in the mouth for fit and contact (Fig. 25) and a bite was again taken.

4. The upper working model was poured in Mollot's metal and plaster. This was articulated to the lower model on the machine by means of the centric relation bite.

5. A coping bridge was cast between the cuspid abutments, providing four gold stumps for the anticipated four porcelain jacket crowns. This casting was soldered to the cuspid copings but was not soldered to the bicuspid cast crown.

6. The frame of the anterior bridge was placed in position in the mouth, and the two bicuspid cast crowns were placed in position (Fig. 26).

7. An upper impression was taken. A small model was poured, and the upper right coping was soldered to the upper right bicuspid crown. This was fitted back into the mouth, and a second plaster impression was taken of the cuspid coping and the upper left bicuspid crown. A small model was poured, and the joint soldered together. The anterior bridge was now refitted in the mouth.

8. The bridge was then removed from the mouth and placed on the working model. Impressions were taken of all the incisors and the cuspids. Amalgam dies were packed and a model was made which represented the mouth with the exception of the six anterior amalgam dies.

9. Porcelain jacket crowns were now baked and fitted on the amalgam

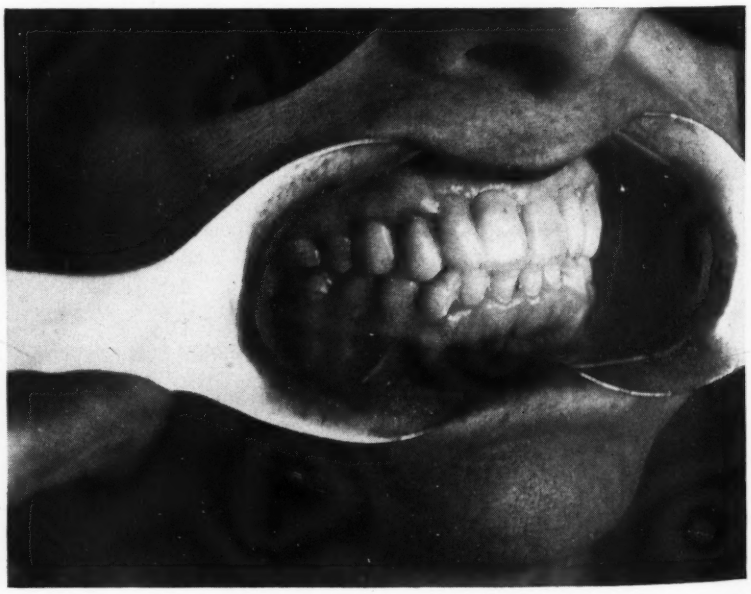


Fig. 29—Completed reconstruction.

dies, and were transferred back to the bridge (Fig. 27). Acrylic facings were now processed in the buccal surfaces of the two upper first bicuspids. The color corresponded with that of the porcelain jacket crowns (Fig. 28). The bridge was again tried in the mouth for fit, color, and contour. When these were found to be satisfactory, the bridge was removed.

10. The four abutment teeth were cleaned thoroughly with warm water and alcohol, and were painted with cavity varnish. The central and lateral jacket crowns were cemented on the frame of the bridge before it was cemented in the mouth. The entire bridge, with the exception of the cuspid porcelain crown, was cemented in the mouth, and the two porcelain jacket crowns were finally cemented in place. The bite was adjusted and thus the bridge was completed (Fig. 29). Hydrocolloid impressions were taken of the completed fixed bridge, and stone models were poured. Photographs and roentgenograms were taken.

730 *Fifth Avenue.*

Treatment of Acute and Chronic Traumatic Temporomandibular Arthritis

LOUIS W. SCHULTZ, D.D.S., M.D., and WALTER SHRINER, M.D., Chicago

COMPLETE DISLOCATION and subluxation (self-reducing incomplete dislocation) of the temporomandibular joint often are associated with traumatic arthritis. These conditions usually are characterized by pain and yield a history of trauma. Other forms of arthritis of this joint may be due to infection from the ear, to which it is closely related, and may cause ankylosis. In children arthritis may follow the exanthemas; in adults it may be one of the sequels of a constitutional disease such as rheumatism, gout, or gonorrhea.

The injection treatment discussed here is confined to the subluxated temporomandibular joint. A sufficient number of joints elsewhere in the body has been injected to prove that this treatment is of value in other joints having relaxed capsules and ligaments, the amount of mixture injected varying with the cubic capacity of the joint cavity.

Etiology

1. Such lax ligaments about the joints that even slight violence may result in subluxation.

2. Opening the mouth widely as in yawning, and forcible or too long continued opening as during the extraction of teeth.

3. If during an ether anesthesia the patient has difficulty in breathing and the anesthetist holds the lower jaw upward and forward to make respiration easier, the lower jaw may subluxate or even dislocate.

4. A positional pressure, as sleeping on the arm, may cause the disturbance by forcing the jaw to the opposite side.

Symptoms

1. Pain, remote or local.

2. Luxation or subluxation.

3. A clicking or grating noise, or both.

4. Locking of the mouth in either the open or closed position.

5. Mental complex of fear.

Injection Experiment

Treatment of the subluxation of the temporomandibular joint by the injection of a sclerosing agent was instituted because of the numerous disadvantages encountered in the operative therapy. Experimental work was conducted to determine if the resultant fibrosis and shortening of the ligaments would stabilize the joint without exerting a deleterious effect on the motion of the joint or on its cartilaginous surface. After numerous trials in which various solutions were used in experiments conducted on the joints of dogs, cats, rabbits, and guinea pigs, sodium psylliate (sylnasol) was selected. Histologic examination of the cartilaginous surfaces of the joints injected showed no inflammatory reaction.

Injection Treatment

Technique—1. The results of careful inspection of the external auditory meatus and the bite of the teeth, and the time of the click, if present, are recorded.

2. A 0.2 per cent aqueous solution of eucupine in oil and a 5 per cent aqueous solution of sodium psylliate are mixed by extracting them in equal parts with the hypodermic syringe through the rubber stoppers of the bottles. The mixture is converted into an emulsion by violent shaking, and 6 to 8 minims are injected into each temporomandibular joint. The solutions must be freshly mixed or they lose their potency. This precaution makes the treatment almost painless.

3. A 1 cubic centimeter tuberculin syringe is filled with the sclerosing solution to be injected, and a 26-gauge, 1½-inch needle is adjusted.

4. The skin over the joint is rubbed briskly with an alcohol sponge.

5. The tip of the left index finger is dipped in alcohol and used to palpate the structures over the joint.

6. The patient is asked to open the mouth until the head of the condyle leaves the glenoid fossa.

7. Then the needle is inserted inward, forward, and upward into the cavity until it strikes the inner table of bone at a depth of from 2 to 3 centimeters. The needle is withdrawn about ½ centimeter, and the piston is pulled to see that the needle is not in a blood vessel. Six to 8 drops of a modified solution of sodium psylliate are injected.

(*Continued on page* 326)

The Editor's Page

THE CASUALNESS with which some dentists approach tooth extraction has been a subject of concern to many practical biologists. The complete disregard for the laws of surgical asepsis and the lack of clinical judgment unquestionably have contributed to the death of some persons. Fatal infections following tooth extraction are, fortunately, uncommon, but they do occur. The fact that death usually does not come immediately after extraction but that the patient may survive a month, or thereabouts, often obscures the causal relationship.

Haymaker,[1] of the Army Medical Corps, has published a complete and carefully documented article analyzing twenty-eight fatal infections of the central nervous system and meninges that followed tooth extractions. Of the intracranial complications, sinus thrombosis and brain abscess were the most common. With the permission of the Army Institute of Pathology, Army Medical Museum, three drawings are reproduced on pages 325 and 326 that illustrate the anatomic structures most often involved and the pathways for the spread of infection from the jaws.

Major Haymaker summarizes his series as follows:

"1. Twenty-seven cases of fatal intracranial complication of tooth extraction, and one of transverse myelitis, are presented. The extractions are believed to have initiated or precipitated the infective process in virtually all the cases.

"2. The teeth were removed because of periapical abscess, caries, impaction, malposition, painful eruption, and for other reasons. Cases in which teeth were extracted to drain an already advancing osteomyelitis of the jaw were not included in the series.

"3. The mouth was in poor hygienic condition in only eight of the twenty-eight cases.

"4. In nineteen of the cases only one tooth was extracted, which indicates that, in this series at least, the danger of fatal intracranial complication lies elsewhere than in multiple extraction. In cases in which the greatest number of teeth had been extracted there was no evidence that bacteremia ensued.

"5. Upper teeth were removed in the same number of cases as lower teeth. Direct spread of the infective process to the intracranial cavity was encountered more often after extractions from the upper than from the lower jaw (10 as against 6), while in hematogenous infections the reverse was the case (9 to 5).

"6. Of teeth extracted, the molars predominated. Only molars had been extracted in cases in which cavernous sinus thrombosis ensued (except for one in which a bicuspid was also removed). The tendency for infection in the vicinity of molar teeth to lead to intracranial complications doubtless is to be ascribed to anatomic relations: Not having free access to the oral cavity or to the exterior as in the anterior part of the jaw, the pus tends to collect between the muscles of mastication and to spread rapidly upward in fascial planes.

"7. In some of the cases the collection of pus at the base of the skull was so deeply situated that its presence was not recognized or was not reached by surgical means.

"8. From a bacteriologic standpoint the most frequently encountered organism in hematogenous infections was the streptococcus; and in the infections reaching the intracranial cavity by direct spread, the staphylococcus. Bacteremia occurred as the immediate result of extraction in seven cases, shortly after extraction in association with fulminant cellulitis of the jaw in two, approximately one month after extraction as the result of surgical intervention in two, and at undetermined times in three.

"9. Spread of the infective organism to the intracranial cavity by way of the general circulation occurred in ten instances, and to the spinal cord in one. In seven of the eleven there was brain abscess; and in four, leptomeningitis, choroiditis, lateral sinus thrombosis, and transverse myelitis, respectively.

"10. Direct spread of the infective process to the intracranial cavity occurred in eighteen cases. In eight of these there was suppurative cellulitis which spread to the base of the skull, producing osteomyelitis of the greater wing of the sphenoid bone. Brain abscess due to direct spread of the inflammation through the bony cranial wall occurred in seven instances. In seven of the nine cases of cavernous sinus thrombosis the venous blood stream was the only pathway along which the infection reached the sinus from the extracranial focus, while in the remaining two the process was one of direct extension of the inflammation through the bony cranial wall with secondary invasion of the venous blood stream. Intraorbital abscess occurred in six instances. Of paranasal sinuses involved, the sphenoidal came first and the maxillary second."

---

[1] Haymaker, Webb: Fatal Infections of the Central Nervous System and the Meninges After Tooth Extraction, Am. J. Orthodont. & Oral Surg., 31:117-188 (March) 1945.

*The Structures Involved and the Pathways Followed in Fatal Infections After Tooth Extraction**

Fig. 1—The relations of the paranasal sinuses of the left side of the skull. The midline of the base of the skull is indicated by the broken dark line, and the outline of the orbit by the white line. The frontal, maxillary, and sphenoidal sinuses are in dark tone, and the ethmoidal sinuses in light. The duct of the frontal sinus lies in close relation to the anterior ethmoidal cells. The anterolateral aspect of the sphenoidal sinus is medial to the apex of the orbit, and is contiguous with posterior ethmoidal cells. The upper part of the maxillary sinus is adjacent to the orbit, while the floor is closely related to the roots of the molars and the second bicuspid, and sometimes those of other teeth. The division of the ethmoidal sinuses into two parts, anterior and posterior, is indicated. After tooth extraction the sphenoidal sinus is the one most frequently involved by ascending infections.

Fig. 2—Pathways followed by infections which ascend from the jaw to reach the intracranial cavity. The most frequent site of penetration of the base of the skull by infections complicating tooth extraction is the greater wing of the sphenoid in the vicinity of the foramem ovale (indicated by the thicker arrow). The extracranial collection of pus is sometimes so deeply situated that its presence is not recognized clinically. The next most frequent cranial structures involved are the sphenoidal sinus and the overlying sella turcica. The infective organism may reach the sphenoidal sinus directly (as indicated by the arrow within the exposed sphenoidal sinus) or by contiguity from the greater wing of the sphenoid bone. (In some cases a sphenoidal sinusitis may be the result of retrograde thrombosis from a thrombosed cavernous sinus.) Another route of spread is through the petrous part of the temporal bone. In some cases the infective organism reaches the retrobulbar tissues in the manner indicated, and subsequently may enter the intracranial cavity via ophthalmic veins or by direct spread through orbital fissure or canal.

Fig. 3—The venous tributaries of the cavernous sinus, including those from the teeth. The arrows indicate the direction of blood flow. Veins of the lower jaw drain via the inferior dental vein into the pterygoid plexus of veins (PTER), while those from the upper jaw drain in two directions: the more anterior ones

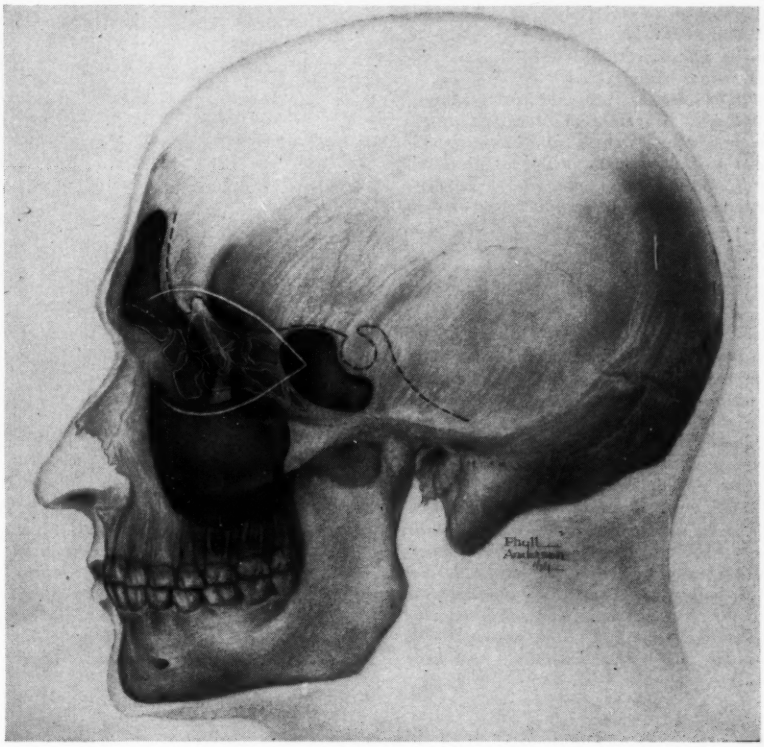
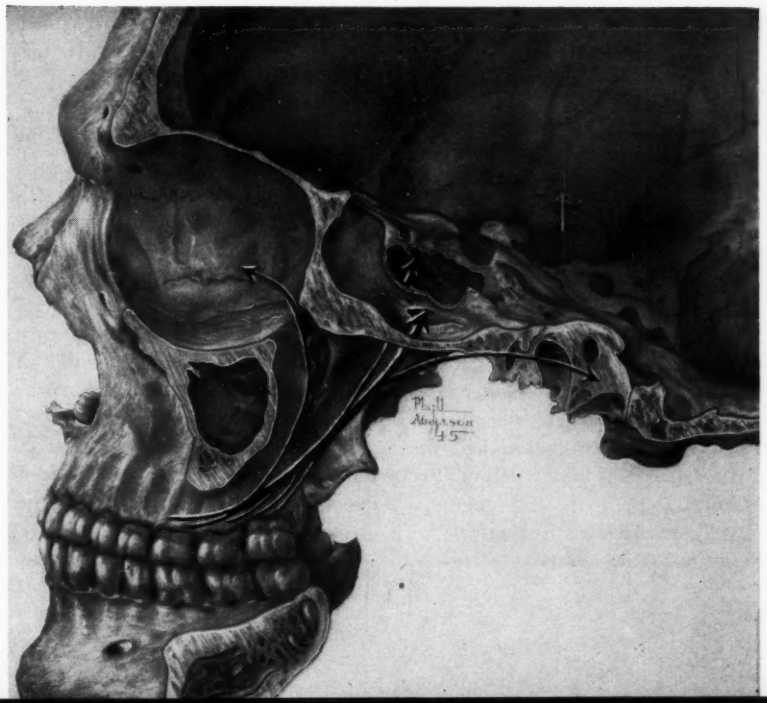


Fig. 1

Fig. 2



*Drawings from the Army Institute of Pathology, Army Medical Museum.

into the anterior facial vein, and the more posterior ones into the pterygoid plexus.

The pterygoid plexus lies in the subtemporal and pterygoid fossae; it surrounds the lateral pterygoid muscle and covers the lateral surface of the medial pterygoid. In addition to the teeth mentioned, the pterygoid plexus drains the fauces, the soft palate, and the pharynx. In ascending infections complicating tooth extraction, the pterygoid plexus, together with the adjacent pharyngeal plexus (PH), is subject to thrombophlebitis. The infection usually reaches the cavernous sinus (CAV) by way of the vein of Vasalius (present but not labeled) and often traverses the foramen of the same name, which is situated anteromedial to the foramen ovale; other routes followed from the pterygoid plexus are by way of the foramina ovale and lacerum. On the other hand, a thrombophlebitis of the pterygoid plexus may extend through veins which communicate with the inferior ophthalmic vein (IO).

In cavernous sinus thrombosis following infections of anterior teeth the thrombophlebitis tends to take the anterior route: via the anterior facial and its continuation, the angular vein (formed by the union of the supraorbital and frontal veins), and then through the orbit by way of the ophthalmic veins, especially the superior.

Tributaries draining into the cavernous sinus by way of the superior ophthalmic vein (SO) are from anterior facial structures (external nose, lips, forehead, eyelids, and cheek) and from the mucosae of the frontal sinus (F), the anterior ethmoidal cells (AE), the posterior ethmoidal cells (PE), and the upper part of the lateral nasal wall. The cavernous sinus also receives venous blood from the mucosa of the sphenoidal sinus (SS), from the superficial inferior cerebral veins (CV), and from the sphenoparietal venous sinus (SP). The sphenoparietal venous sinus drains diploe of the lesser wing of the sphenoid and veins of the dura mater. Blood leaves the cavernous sinus chiefly through the superior and inferior petrosal sinuses (SPS and IPS, respectively).

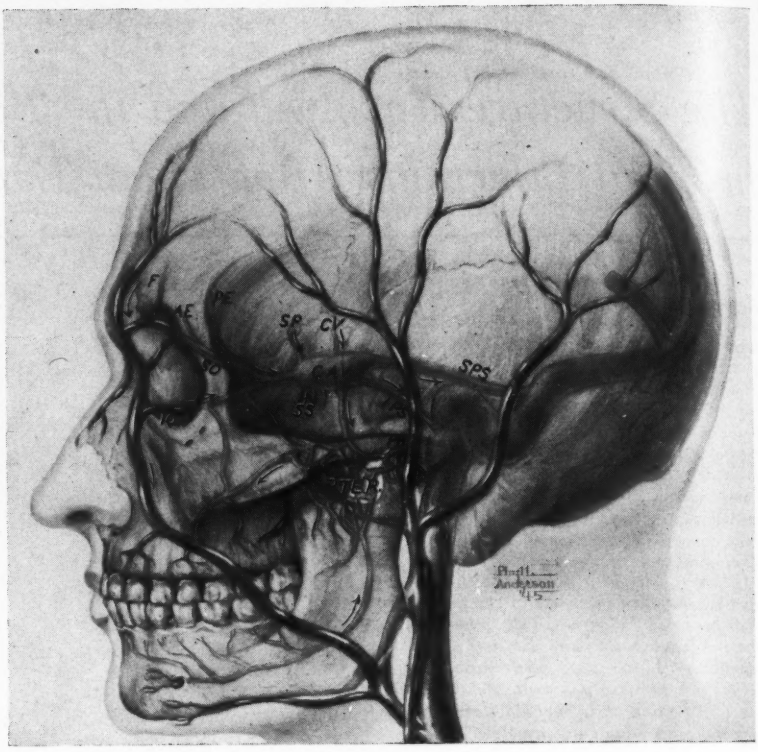


Fig. 3

Treatment of Acute and Chronic Traumatic Temporomandibular Arthritis

(*Continued from page* 323)

8. This procedure is repeated on the opposite side.

9. The injections should be repeated every two or three weeks until sufficient fibrosis has developed to effect a cure. From one to as many as six injections may be required. The second or third injection is harder to make because the head of the condyle now does not leave the glenoid fossa when the mouth is open.

Results—Patients suffering most from pain, subluxation, and clicking usually obtain the best results. Likewise, relief is more prominently obtained in patients sustaining the greatest degree of local reaction after injection.

1. There may be discomfort for twenty to thirty minutes after the injection has been given. For this reason 10 or 15 grains of aspirin are given at the time of injection, with instructions to the patient to take more later if necessary. An opiate was necessary in only two of the first 180 patients treated.

2. The injection itself should not produce more discomfort than the prick of the needle followed by a slight feeling of fullness in the joint.

3. The patient usually has no complaint other than some interference with chewing for the remainder of the day on which the injection was made.

4. A slight feeling of numbness of the side of the face may be noticed due to the anesthetic action of the oily solution.

5. There may be swelling in the region injected, which usually lasts three or four days.

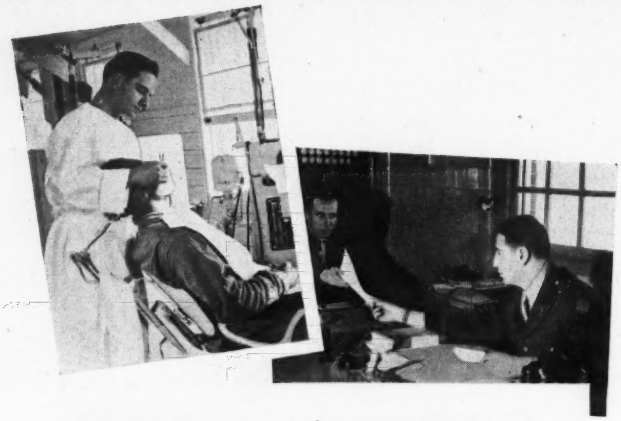
6. The bite of the teeth may be shifted slightly forward and downward or to one side temporarily, and the molars may not come into occlusion temporarily because of the thickening of the capsule.

7. Salivation with pain occurs, but rarely, for a day or two.

8. This method of treatment fails primarily because the injection is not made in the proper place, when it is made into a blood vessel, or when made into the periarticular tissue or into the external auditory canal.

—From *Journal of the Florida Medical Association*, 30:189-194 (November) 1943.

In your ORAL HYGIENE this month



WHAT I THINK OF ARMY DENTISTRY

"The setup of the [Army] dental clinic is a Hyser dream," says a dental officer who prefers to remain anonymous, and who writes frankly of the advantages and disadvantages of Army dentistry as compared to private practice.

"Many a seemingly insoluble dental puzzle is gradually clarified during discussions such as are not possible in private practice."

But, on the other side of the ledger, are the time-consuming administrative details, the restrictive authority of the medical officers, and the inexperience of some of the younger higher-ranking dental officers.

Read the article on page 994, then turn to page 1022 to learn how the profession can help the Dental Corps correct some of the hampering conditions under which it now operates. Doctor John W. Leggett gives practical suggestions for immediate action in his article, "Dental Corps *Must* Have Freedom."

★ ★ ★

Have you heard of the "Gummers"? Organized in fun, the club now has a serious purpose—"to encourage young and old to take care of their teeth while they still have them." An amusing account of the club's activities, written by Carrol C. Hall, appears on page 1000.

★ ★ ★

Hungry? . . . Then *don't* read the article on page 1002. It is full of such tempting tidbits as *clam bordelaise, barbecued lamb, baked striped bass,* and *crab a la Selleck.* Doctor George Albert Selleck, professor of prosthetic dentistry at the San Francisco College of Physicians and Surgeons, is one of the most renowned amateur chefs in the country. The story of his talent makes fascinating, though tantalizing, reading.

★ ★ ★

Do you want to help the fellow who's been helping you? Home-coming service dentists deserve a lot of help they'll never ask for. One way of giving friendly cooperation is explained on page 1006.

★ ★ ★

Maybe you know "Why Dentists Stay Away from Meetings." But, if you're on the committee in charge of a dental meeting, don't miss Doctor S. J. Levy's article on page 1010. It should be required reading for all program chairmen.

★ ★ ★

"Dental Prosthesis at a Large Naval Establishment" tells how prosthetic work is planned and carried out at Great Lakes Naval Training Center. The article, on page 1014, was written by Lieutenant T. A. Bodine (DC) USNR and Lieutenant R. A. Patraw (DC) USNR.

★ ★ ★

In a recent report of the Subcommittee on Wartime Health and Education, five U. S. Senators expressed the concern of the Nation over the health of all veterans, and outlined recommendations for meeting their health needs now and in the future. You will want to read the article on page 1022.

Contra-Angles

Fit the Patient to the Dentures . . .

A colleague of mine here in town has been adjusting a full upper denture for about four weeks. That's not unusual because we all occasionally run into these difficulties. In this case, however, my friend did not make the denture. He has undertaken the thankless job of trying to adjust a denture made by a well-known prosthodontist who has written books on the subject and has shouted about the subject from the rostrum in every part of the country—and I mean shouted!

Even specialists, with their fame, have troubles like the rest of us. There is no reflection on this particular specialist except that he did a perfunctory and arrogant dismissal of the patient while he was still having difficulties. The pompous one told the patient that the denture was the best that human brain could conceive and that human hands could execute. The patient did not agree: The damned teeth hurt and they were no good for eating!

The patient appears to be a reasonable fellow who expected some discomfort with a new denture. He was not asking the impossible. He was willing to keep returning for adjustments until the appliance was comfortable. But the "big shot" specialist would not have it that way. After a couple of adjustments the important one decided that the patient was a neurotic and that the sore spots in his mouth were manifestations of psychic imbalances rather than the result of mechanical irritations. That is always a good way out for any of us: When the treatment is unsatisfactory, blame the patient and his psyche,

(*Continued on page* 337)

(*Continued from page* 330)

and label him neurotic and a hypochondriac.

I did not ask but I imagine that the bill was paid in full before the brusque dismissal. The patient with the sore mouth was not satisfied with the abrupt discharge. He told the "great" man so. They had something of a tiff, called each other a few strong names, shouted and waved their fists in each other's faces for a while. After that the patient looked around for somebody to help him. That is when he came to my friend, carrying with him a strong hostility toward the "great" man, along with a sore mouth. My colleague is a patient fellow. He has been grinding and cutting and adjusting the denture—"the best that could be executed by human hands."

The patient is still in trouble, and so is my friend. The other day I saw them both. I looked at the denture, too. It was not bad. In fact it was pretty good, about the run of the mill sort that any of us could make. The sore spots and the high spots are reasonably well relieved. My friend does not know what to do next. I suggested that he make a new denture. He is hesitant to do so. He says he is only a general practitioner and that he could not possibly be as good as the arrogant specialist. I told him that whatever he did would be better than what the patient is now wearing because the present denture is too intimately associated with the specialist against whom the patient has violent hostilities. I added that unconsciously the patient wants to reject anything, including the denture, that is associated with the person against whom he has such violent feelings.

My colleague says that I am being entirely too psychoanalytic in my appraisal and that I am getting too far afield from dentistry. I defend my statements by saying that objectively and tangibly the present denture would be called good since the adjustments have been made; therefore, the trouble must be somewhere in other spheres of experience—in the psychosomatic, for example. This is not saying the same thing as calling the patient neurotic. In this case the re-

sentment springs from the experience with the denture specialist. The patient went to the prosthodontist with a fair, cooperative, and reasonable attitude. He developed his resentment during and *not* before his denture experience.

All this can be well summed up in what Nick Uelmen said years ago while we were sitting around the beer mugs in a Milwaukee bar: "Most lower dentures are satisfactory because the patients like the dentist."

Fighting It Out in the Headlines . . .

While we are talking about these human relationships that make up such a large part of professional practice, I am reminded of a story that appeared in *The Chicago Sun* recently:

"EXCESS SURGERY FOR FEES CITED BY PROFESSOR

"Doctor F. C. Lendrum, an assistant professor in the University of Illinois Medical School, today cited what he termed doctors' 'irresistible temptation to operate' for fat fees as his reason for advocating 'group medicine' as offered by the Wagner-Murray-Dingell bill.

"*Surgery More Profitable.*

"Addressing the Illini district of the Illinois Welfare Association, he said:

"'A doctor can collect $500 for operating and $25 for discovering that a patient does not require surgery. The patient has no way of knowing whether he is a victim of free competition or whether the surgeon is honest.'

"'*Exaggerations,' says Fishbein.*

"(Commenting on Doctor Lendrum's charges, Doctor Morris Fishbein, editor of *The Journal of the American Medical Association*, said in Chicago last night: 'To me these statements sound like the completely irrational exaggerations of a young man without any actual experience in medical affairs. One would be interested in seeing some proof of the statements.')

"Pointing to Chicago, the professor said, 'It is rare to find a woman on the Gold Coast who has not had something taken out.'

JUSTI RESEARCH Suggests:

New CYCLO-MOLD plastic teeth Types 1 & 5 are now released in sizes M—medium, N—normal and S—small.

Types 1 & 5 are especially suitable for partial dentures — feature wide neck mesial-distally.

Recent Rockwell tests, after water immersion at 98° F., indicate that the teeth are as much as 14% harder than standard Lucite or Plexiglas sheet. These tests were made by an unbiased testing company.

Preliminary abrasion tests indicate that an average patient would, upon 150 hours continuous chewing, reduce his vertical dimension three sixty-fourths of an inch—if he were chewing coarse pumice!

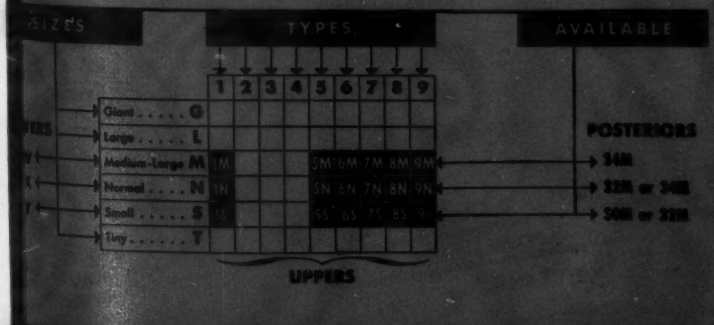
Three first-line denture materials were tested (including Justi-Tone T-3), among many others. The test was made to determine posterior peripheral seal. Variations in first three were from .007 to .017 of an inch. Others varied up to one-quarter of an inch. Tests were made after fourteen days water immersion at 98° F.

The moral of the above is clear—if you want permanent stability and retention, use good denture materials.

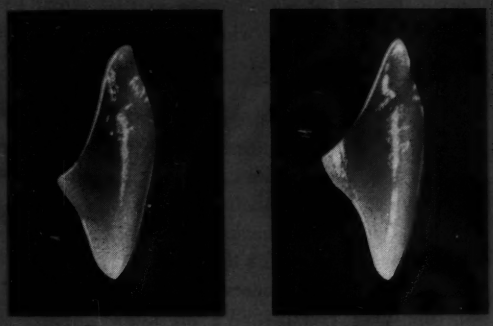
Denture technic is important—complicated, lengthy time-heat factors are unnecessary. The following still holds—158° 1 hr.—212° ½ hr.—cool at least 15 minutes in tap water.

There is some evidence that 20 minutes at 212° F. is adequate for ACRYNAMEL jackets, crowns and inlays.

DENTA PEARL *Cyclo-Mold* PLASTIC TEETH



2 NEW TYPES IN 3 SIZES...



Type 1 Type 5

IN THE

HARDER!

DENTA PEARL *Cyclo-Mold* PLASTIC TEETH

TYPES 1 and 5—are reproduced from natural tooth form, but have been mechanically corrected to fulfill the requirements of long ridge lap, close-bite and butt-gum cases.

TYPES 6, 7, 8 and 9—are absolute and exact natural tooth duplications, lending themselves particularly to normal full denture use, due to their complete anatomical design.

UNCONDITIONALLY RECOMMENDED FOR

FULL DENTURES

Products with a Single Purpose - Better Dentistry

H. D. JUSTI & SON, INC., PHILADELPHIA 4, PA. RELIABLE DENTAL PRODUCTS SINCE 1864

"Fee Splitting Charged.

"He charged the 'fee-splitting racket'—by which a surgeon and a 'referring physician' divide charges for an operation—is the 'routine way' for the 'average practitioner' to make a living.

"Accusing the American Medical Association of a 'poor grade of soapbox rabble rousing' against the Wagner-Murray-Dingell bill, he said the association had a 'questionable right' to speak for the entire profession, since its control was 'largely in the hands of physicians who are beneficiaries of the referral of patients and fee splitting.' "

If we evaluate this story judiciously and after our own mature experiences we can be safe in commenting that Lendrum and Fishbein are both wrong. There are quacks in surgery —and in dentistry, for that matter— who make their diagnoses with an eye to the gate receipts. We all know them. They are in the minority. Most surgeons and most dentists are honest. Their errors in judgment are always regrettable but they are not made with malice or avarice.

Public trust and confidence are not encouraged by a newspaper story like this. It is not in the public service. It makes people suspicious of physicians and dentists. It may cause people to delay necessary treatment too long. There are quacks and fee splitters in the professions, but in numbers they are not many. Professional societies have done a good job of keeping them under control. The professional organizations can do a better job than any other agency. Doctor Lendrum should air his squawk to the Grievances and Ethics Committee of his Medical Society. That, rather than running to the newspapers, is in the professional tradition.

Mail Call . . .

Anyone who has had a chance to read the publications of the Armed Forces should be impressed with some of the thoughts expressed by Service people regarding the postwar world. The wishes and desires of the veterans should be more valid than the ideas of the civilians who have done most of the talking on the subject up to this time.

Many of the veterans have ideas about a new kind of medical distributive system. Although some may advocate out-and-out socialized medicine (whatever that is), most veterans will probably prefer some kind of nonregimented, more personalized service system than that they have experienced in the Army and Navy. When young people receive free care during the impressionable years of their lives, however, they may not be too eager to return to a system of totally and personally paid health care. They may demand some modification of the private practice system. I doubt if any group in the United States is prepared at the present time to speak the sentiments of the veterans regarding health care. Nobody knows how far to the "right" or to the "left" will be their political and economic thinking. They will in any case be the most powerful political bloc the world has ever seen. The G.A.R., the Spanish-American War veterans, and the present American Legion, are puny organizations com-

pared with the veterans' organization that will grow out of this war.

Here are two MAIL CALL letters that should be of interest to people thinking about the future medical distributive system. From *Yank*:

"Dear *Yank*:

"Here are some changes this hospitalized combat infantryman wants to see in postwar America:

"1. Socialized medicine — Draft board rejections revealed our national ill health. All America wants to be 1-A but can't afford it. Americans can't be 4-F.

"2. Full employment—Not unemployment. Work for all who want to work. Worklines for breadwinners, not breadlines for jobless.

"3. Complete slum clearance — More housing projects. Three thirds of the nation well housed. Trailer towns, stovepipe fabrications, real estate profiteers, and owners who can't bear the noise of soldiers' children, must go with the wind.

"4. Franchise for eighteen-year-olds—Some of my buddies who were killed fighting for freedom never had the opportunity to cast their votes.

They knew what they fought for and if they had voted they'd have known for whom they voted and why.

"5. Representative free press—The majority of the American press has not reflected majority public opinion for the past twelve years. As witness the past four Presidential campaigns. The newspapers and magazines of America had better put their ears to the ground instead of to the advertising dollar.

"6. Broader educational system—Only a minute percentage of American youth finishes college. Give every person with the intelligence and desire the opportunity to do so. Ability to learn must be substituted for ability to pay.

"7. Flood control extension—Harness all our rivers from coast to coast. Electrify the land with power lines, not with headlines of flood disasters."

From *The Stars and Stripes* comes:

"*Natural Doctors.*

"Of late there have been numerous news items in the paper about the bravery and the skill of combat medics. In some instances young GI's who likely would have failed the entrance examination in Latin or physics to a medical school have amputated legs, performed delicate throat operations and other tasks which would make a veteran surgeon look to his laurels.

"These events have caused me to wonder if our present educational system, especially that pertaining to medicine, is not in need of drastic revision. Bit by bit one obstacle after another has been erected so that many of our natural healers and physicians have been excluded because of the lack of funds or superficial academic knowledge. Let's dispense with all the hullabaloo that goes into the 'bedside manner' and devise a postwar medical system which will do for humanity what the war has done, reveal and enhance the real medics."

The present policies of the American Dental Association and the American Medical Association are being formulated by older men, some of whom are veterans of World War I; but few are World War II veterans.

It would be well to draw into the councils of these organizations representatives from World War II who have some influence with the veterans' organization that will soon be planning health programs. In ten years the veterans' organization of this war will, if it wishes, control the government of the United States and of every political subdivision. It will be much wiser if the professional organizations work with the veterans' organization rather than against it—wiser for everybody.

Some of My Best Friends are Fellows . . .

Brigham Young had many wives. In his day this was called "plural marriage." Now we find the subject of "plural membership" in dental organizations coming up for discussion.

According to the code of the American College of Dentists one can be a "fellow" only there and not elsewhere. Double fellowship is plural membership—and that's bad, according to the American College of Den-

tists. The American College of Dentists, made up of about 1200 members dedicated to the Torch and Mace ceremony with rustling and flowing bright caps and gowns, takes time from its heavy affairs and momentous discussions to conduct a mail ballot on this resolution:

"Resolved, that the American College of Dentists will not admit to membership any person holding membership in any similar honorary dental organization. Fellows of the American College of Dentists, who are also members of a similar honorary dental organization, are requested to consider the propriety of early withdrawal from one or the other."

How come? If the American College of Dentists is so important, why should it have any fear of competition from a "similar honorary dental organization?" Can't a poor guy string the alphabet after his name, letters without end, if he is willing to pay the membership tolls?

We never use the alphabet soup to identify writers in this magazine because these so-called fellowship degrees are unearned, meaningless, and without scholastic validity. We hope, though, for the sake of all the exhibitionists, that no quotas, rations, or embargoes will be placed on the number of "fellows" one may become. It's a harmless sport—though expensive.

What the American College of Dentists needs is a few more laughs in their convocations and not so many from the outside.—E. J. R.

Three Insufficiently Utilized Operating Aids

(*Continued from* 311)

leaves both hands free, which is not the case with an illuminated mouth mirror.

The Magnifying Glass

A magnifying glass with a long focal length, when used in conjunction with the headlamp and a magnifying mouth mirror, makes it possible to detect incipient pathologic conditions on tooth surfaces and the gingiva, which would otherwise escape notice.

—From Practical Notes, *The British Dental Journal*, 78:240 (April 20) 1945.

Advertising Index

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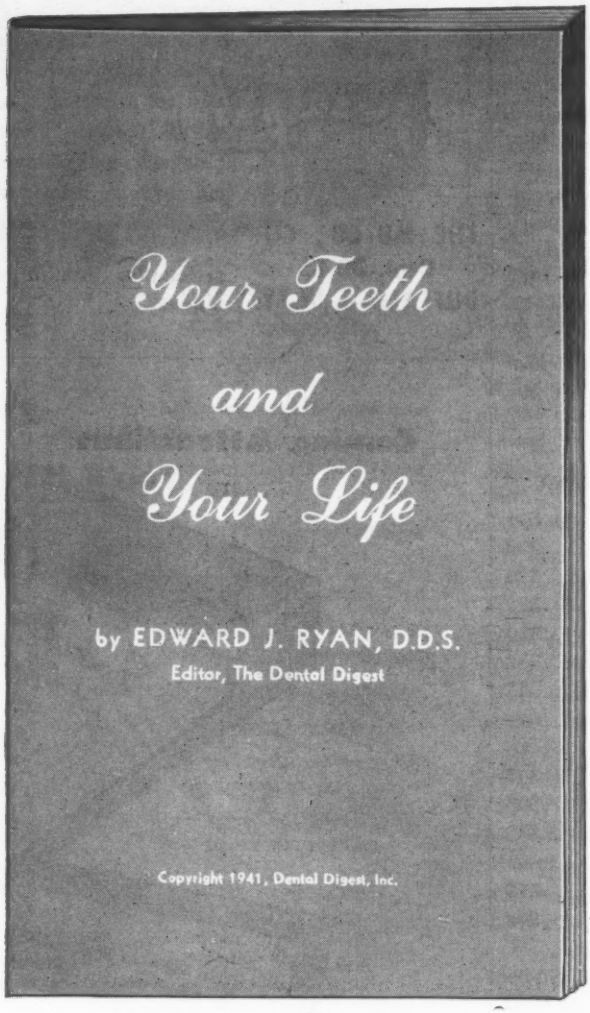

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